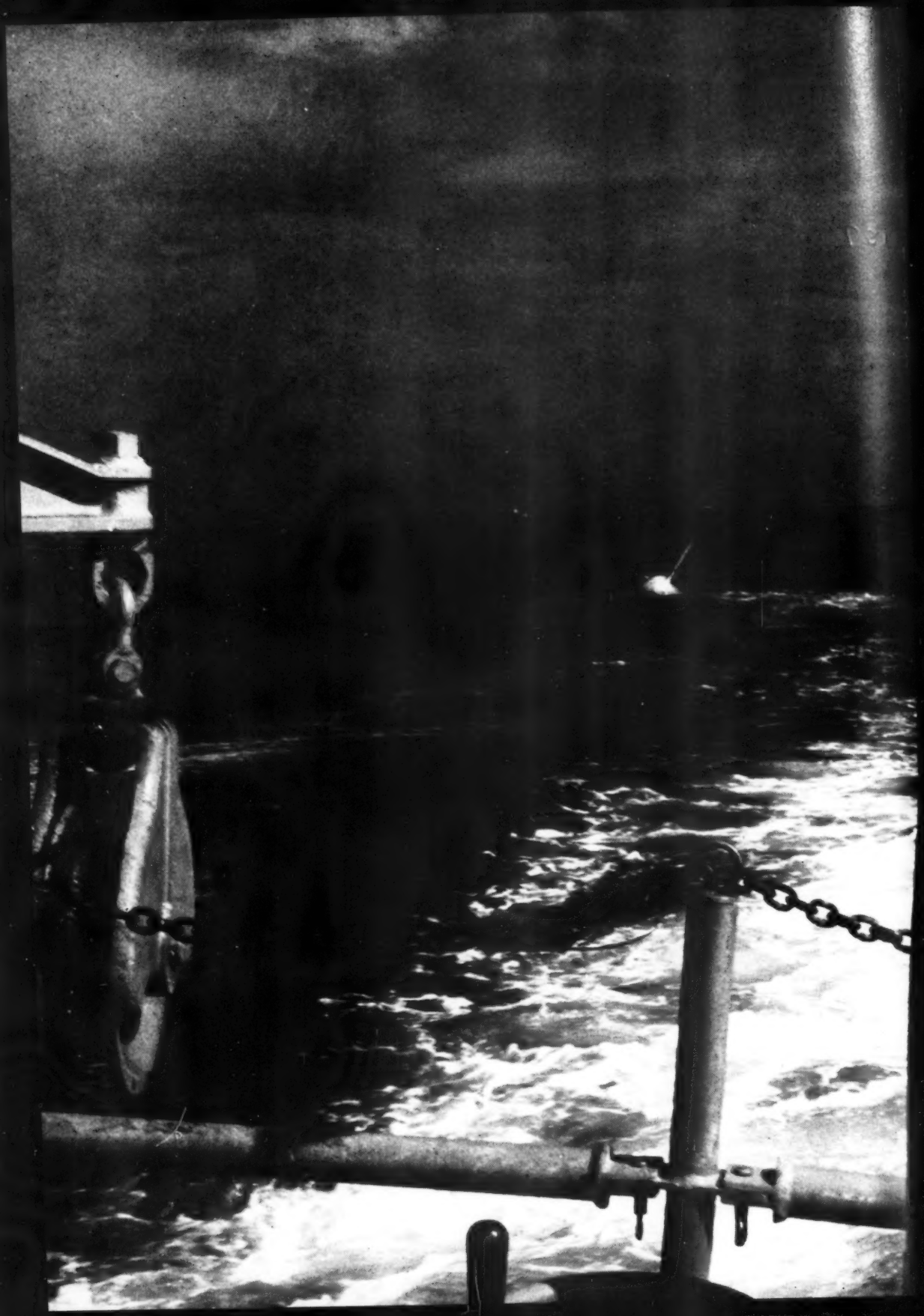


ALL HANDS

GENERAL INFORMATION

This magazine is intended
for 10 readers. All should
see it as soon as possible.
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OCTOBER 1958



ALL HANDS

THE BUREAU OF NAVAL PERSONNEL INFORMATION BULLETIN

OCTOBER 1958 Nav-Pers-O NUMBER 501

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• **FRONT COVER: HATS OFF**—Member of gun crew on board the heavy cruiser USS Des Moines (CA 134), flagship of the Sixth Fleet, takes time out to write letter home while white hats dry on rail during cruise in Mediterranean.

• **AT LEFT: MINESWEEPING EXERCISE**—Sweeper's pig, a float holding the outboard end of the sweep cable, follows in the choppy wake of a MinPac ship during exercises in waters off Long Beach, Calif.

• **CREDITS:** All photographs published in ALL HANDS are official Department of Defense Photos unless otherwise designated. Back cover was drawn by LCDR Edward M. Stevenson, USNR.



Fleet Training Group—

FTG KEEPS THE FLEET

THE U. S. NAVY today has nuclear subs that are capable of operating submerged for months at unbelievable speeds; mobile carriers with great striking power and unlimited "staying power," and potent guided missiles with pin-point accuracy.

As a result of the extreme speeds and ranges of these new weapons, naval operations at sea are now reaching greater distances and covering larger areas than ever before.

Today, instead of being limited to certain operating areas, we find units of the new Navy maneuvering in all corners of the world.

The extended operational commitments — and technological advances

in the Fleet which have made them possible — are both widely publicized. But, seldom do you hear anything about the activities which keep these Fleet units at a peak of combat readiness.

What's the key word here?

It's **TRAINING**, specifically **shipboard training**.

Although the type commanders (ComDesLant, ComSubPac, etc.) are responsible for the state of readiness of the ships under their command, a larger portion of this burden falls upon the *Atlantic and Pacific Fleet Training Commands*.

These Training Commands are charged specifically with conducting

precommissioning, shakedown, refresher and operational training in accordance with the doctrines and requirements of type commanders; assisting in the development of training doctrines, policies, and exercises; and insuring the standardization of those training exercises which are applicable to more than one type command.

THE FLEET TRAINING COMMANDS have been in existence for more than 15 years. During the early days of World War II the Navy found that there were not enough experienced Navymen to train even a skeleton organization for the large number of ships streaming from the shipbuilding yards. It was necessary to develop new techniques for maintaining readiness instead of depending on absorption of new personnel into existing shipboard organizations.

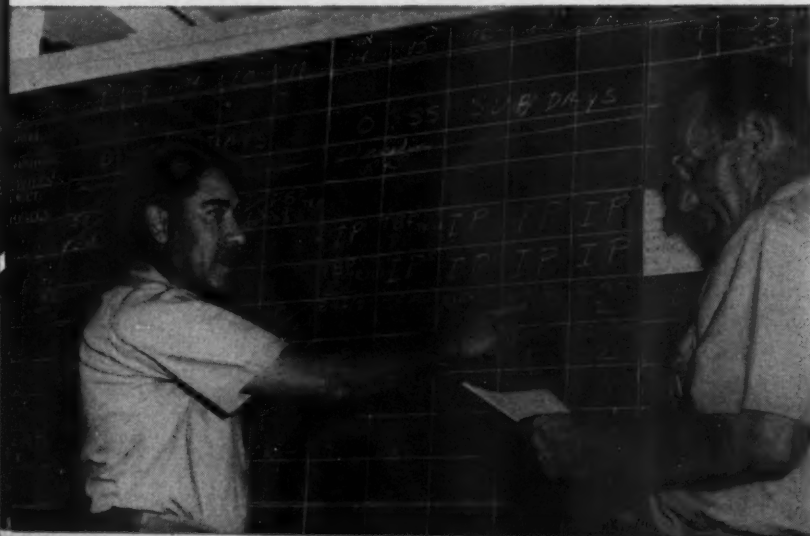
Early in 1943, ADM Ernest J. King, usn, then Commander in Chief, U. S. Fleet, established the first Fleet Operational Training Commands in both the Atlantic and Pacific Fleets.

The job of the Training Command was to work closely with the Fleet in order to insure standardization of training methods and indoctrination.

The new concept of training worked well, and it was economical. It provided broader use of experienced naval personnel, permitted rapid introduction of lessons learned in combat, and it established uniform standards of performance.

After the war, the introduction of

WHO'S NEXT? — FTG men use chart to schedule ships for training exercises.



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increasingly complex new equipment to the Fleet pointed up the continuing value of the Fleet Training Commands.

In addition to the technological advances there's another problem. The normal rate of personnel turnover means that every ship in commission faces the endless problem of training new personnel.

The greatest turnover normally takes place while a ship is undergoing its regular major overhaul. Usually this amounts to more than one-fourth of a ship's crew being replaced. Losses in experience and know-how can be critical if the departing men are key personnel and their replacements do not have the same experience. Also, when a ship is in the yard for overhaul or upkeep, empha-

tions! All hands, man your battle stations!" Crew members swing into action, their tension finally broken.

A unit of the Fleet Training Command is at work. In this case it could be any one of the Navy's five Fleet Training Groups, that are charged with carrying out the policies and mission of the Atlantic and Pacific Fleet Training Commands.

Manning battle stations is but one phase of this training. After kicking off the battle drill, FTG observers check their stopwatches to see how long it takes the ship's crew to man guns, close watertight doors, and all other things necessary to make a ship ready for offensive and defensive action. Meanwhile, throughout the ship, members of the Fleet Training Group are engaged in checking on how well the OOD maneuvers his ship, how alertly steersmen respond to orders, and how swiftly the engine-room makes speed changes on commands from the bridge.

TO LEARN THE FULL STORY of the Fleet Training Commands, you really should start by visiting their headquarters. If you're in the Pacific

you'll find the headquarters of the Commander Fleet Training Command (ComTraPac) located at the Fleet Sonar School, San Diego. ComTraLant is based at Norfolk, Va. Supplementing these commands are the Fleet Training Groups located at Pearl Harbor, T. H.; Yokosuka and Sasebo, Japan; Subic Bay in the Philippines, and Guantanamo Bay, Cuba.

In addition to these training groups, both the Atlantic and Pacific Fleet Training Commands maintain Fleet Camera Groups. It is their job to phototriangulate surface and anti-aircraft gunnery practice, and to furnish photographic services to the Fleet and for other naval activities not having adequate photographic facilities.

At the command or training group headquarters, typewriters clack and mimeograph machines whirl, as a massive load of necessary paper work is accomplished. In another room a corps of veteran officers and enlisted men are busy reviewing performances of ships they've already checked, or planning tests for ships

AMPHIBIOUS exercises coordinate the action of many different Fleet units.



sis is placed on materials and equipment. At this time, ships usually fall behind in their training programs.

But when the ship puts to sea again after an extended period in the shipyard, it's expected to take its normal place in the Fleet again as soon as possible, ready for whatever deployment or services may be required.

Now comes the difficult task of whipping the crew into a smoothly functioning team in an acceptable state of operational readiness. This is where the work of the Fleet Training Commands begins.

TO GIVE YOU AN IDEA of how the training commands go about their business let's go to sea aboard a ship undergoing training.

As the ship leaves port, its crew is tense with expectancy. Watchstanders on the bridge go about their tasks with quiet efficiency, sharply aware of a strange chief petty officer who stands off to one-side, out of the way. When the ship has cleared the harbor and is well out in the deep blue-green water, the chief reaches in his pocket and takes out a small slip of paper. He then steps up to the officer-of-the-deck and hands him the paper.

The OOD reads it, turns and gives an order to his boatswain's mate. Almost instantaneously the loudspeaker blares:

"General Quarters! General Quarters! All hands, man your battle sta-



SHOOTING THE WORKS—Fleet Training Groups supply training aids such as towed targets. Here pilot makes a run during gunnery practice in Pacific.

and crew to be trained in the future.

As said earlier, the training groups are responsible for underway, shake-down and refresher training for all ships in their respective areas. This involves quite a lot of advance preparation and coordination with the various type commanders.

Services available at most of the Fleet Training Groups include surface ship and towed targets, shore bombardment facilities; underway instructors, lesson plans and curricula to assist in self-training; submarine services for ASW exercises; aircraft services (including helicopters, fixed winged, jets and drones) for anti-aircraft firing practice, tracking CIC and radar countermeasure exercises, photo missions, torpedo tracking to assist in recovery, and close support facilities.

So you see, all this involves a large amount of advance planning.

ANOTHER FUNCTION of the Fleet Training Groups consists of assisting with the coordination of care-

fully defined, air, surface and submarine training areas. And they have the added task of keeping a large portion of adjacent ocean areas clear for unrestricted movement of the Navy ships undergoing training.

The training groups in the Western Pacific — where there are no shore-based Fleet Training Centers — offer formal schooling to shipboard personnel. These courses range in length from one day to 12 weeks and cover such items as fire fighting, shipboard gunnery, cold weather training, atomic defense monitoring, motion picture operators school, rifle and pistol instruction, and schools for quartermasters, signalmen and radio operators, to name but a few.

When a ship is due for training by one of the Fleet Training Groups, it usually receives about 60 days' advance notice. Once scheduled, the ships begin to receive bundle after bundle of mimeographed instructions. As one FTG officer explained, "It's like starting school. The new student is told what he'll be study-

ing, and what will be required in the way of equipment, as well as what tests will be given during the course."

The FTG package isn't that simple, however, for it contains skillfully drawn lesson plans for use by shipboard instructors, together with suggested training aids, as well as the detailed briefing on what lies ahead.

Weeks pass, and then finally the big day arrives — training begins. Shortly after getting underway with the FTG team aboard, a "battle problem" is immediately thrown at the crew. This includes simulating every basic situation a ship could possibly encounter. It's hit by torpedoes, shells, missiles, atomic fallout, gas, and even other ships. It's attacked by air, surface and undersea enemies. Its engines fail, electrical systems go out, and crew members are "killed" off in batches or badly wounded. Key officers and petty officers are put out of action, and subordinates are required to take over their tasks.

By the time the battle problem ends, the day is usually over and all hands are exhausted. By that time the Fleet Training Group knows just how good that ship and crew can do what it must be able to do at any moment at any place in the world.

BACK GOES THE FTG TEAM to their headquarters, where reports are studied and a grading is given the "student ship." This is passed to the ship's skipper, together with a list of suggestions for strengthening weak points. Three weeks of additional training and instruction follow. During this period men from the ship are usually sent to the Fleet Training Centers (see page 6) for brief but intensive courses in shipboard skills. Meanwhile, instructors from FTG are aboard the ship and are busily teaching its crew the fine art of delivering and avoiding death.

After this three-week training period comes the "final exam." It consists of another complicated battle problem — one of many prepared in advance and stowed in a safe at FTG's headquarters.

In this final test, a team of FTG men, sometimes numbering up to 50, plus as many as 75 observers from other commands, proceed to put the "student ship" through the wringer. Everything from bow to stern and from the keel on up to the yardarm is checked. Besides the main concerns of a warship — fighting and protecting itself — the tasks which

SCHOOL DAYS — Fleet Training Group member, Chief Gunner's Mate D. M. Choy (at right with cap), points out how gun crew can improve its skill.



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aid those two aims are tested. Smoke bombs are placed in closed compartments, after which the ship's damage controlmen equipped with oxygen-breathing apparatus enter it to accomplish simulated battle repairs.

Crew members in all parts of the ship are "wounded," and their shipmates are checked out on their first-aid knowledge. And the rigid safety regulations — which have kept the Navy's shipboard accident rate very low for many decades — are practically memorized word for word by FTC supervisors, who insure that haste at the expense of caution does not occur.

THROUGHOUT THE TRAINING period conferences are held regularly at every level. Much is accomplished at these, for officers confer with other officers both formally and informally, and enlisted men from the training group talk business with the ship's crew. Criticism is taken in good spirit when it's passed in a friendly manner over coffee and cigarettes.

Then after more training, checking and rechecking, the final critique is held and the ship is graded in performance. If she meets the mark, she is ready to go about doing her job. If not, and this is a rarity owing to the emphasis placed on continued training, she must do some extra studying on her own and, when "boned-up," she must go through the FTC process again.

The schedules at the Fleet Training Groups are tight as they have many ships of all types to train. Quite often the personnel from the training groups get back to their headquarters from the student ship via tug, submarine, plane or helicopter in order to be ready to board another ship the next day.

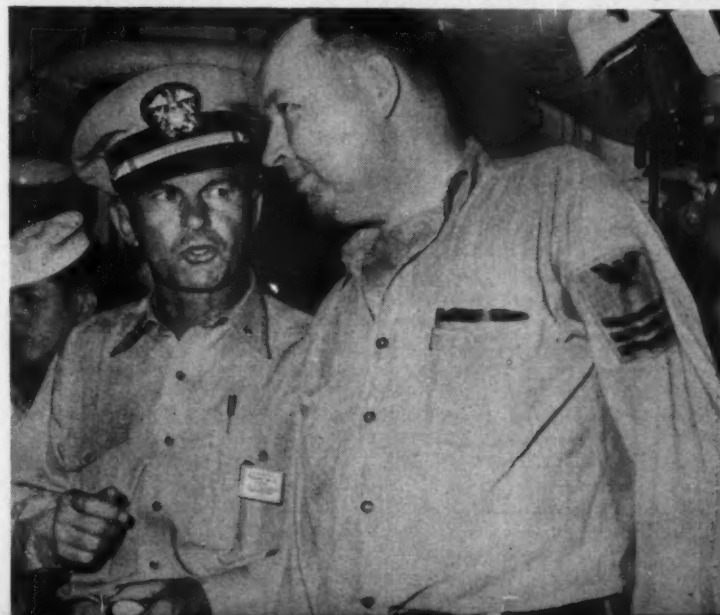
Although kept constantly on the go members of these training groups feel a lot of satisfaction for they know they're keeping every type of ship ready, by giving each one the training it would not normally get in peacetime but would need in wartime. Tugs replenish at sea, net tenders fend off antiaircraft attacks, while destroyers get many chances at the innumerable tasks they have proved themselves capable of doing. The job of the training commands, though an unheralded one, is vital — one that can be summed up in seven monosyllables:

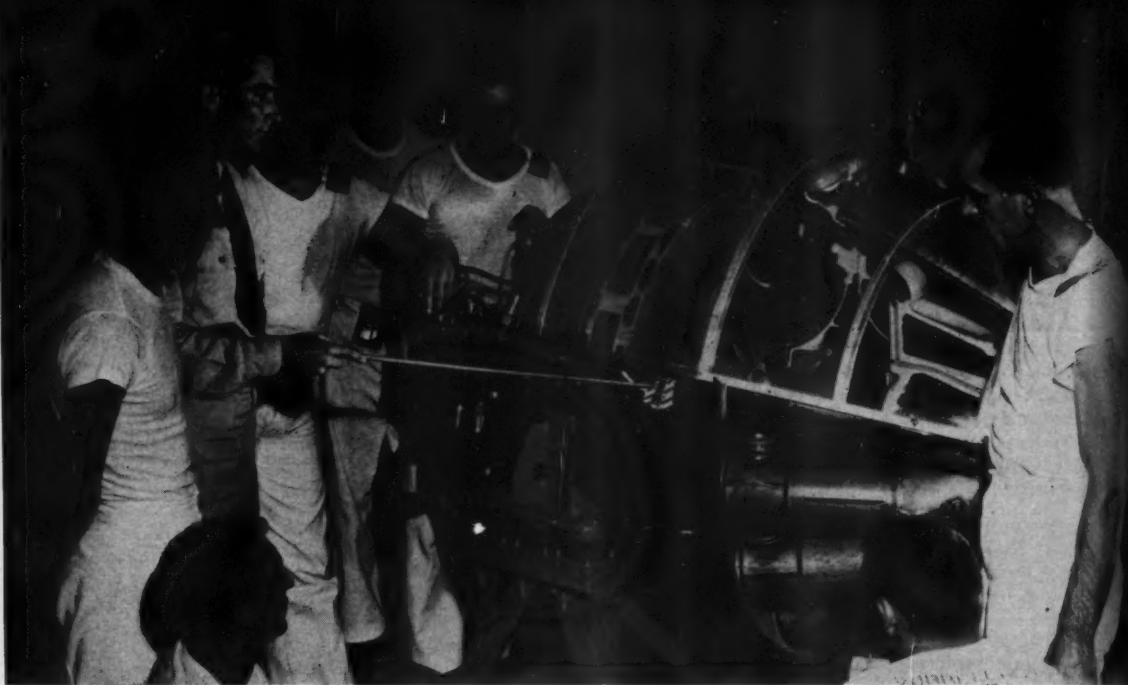
"THEY KEEP THE FLEET FIT TO FIGHT."—H. George Baker, JOC, USN

J. D. Harrington, JOC, USN



FIRE-EATERS — Damage control team enters smoke-filled compartment during fire fighting instructions. Below: Engineerroom gang is clocked by F.T.G.





Campus of FTC

Back to School by Boat

COMING INTO PORT doesn't always spell that magic word "liberty." It may also mean "back to school."

This is often the case when your ship hits an FTC port. FTC is the word for Fleet Training Center, and it provides a program of practical instruction ashore that supplements the Navy's afloat training with the FTC (see page 2).

There are five Fleet Training Centers—located at Charleston, S. C.; Newport, R. I.; Norfolk, Va.; Pearl Harbor, T. H.; and San Diego, Calif. All in all they conduct a total of more than 260 courses.

While the range of training varies at each of the Fleet Training Centers—one offers as few as seven courses while another presents as many as 65—they all have very much in common.

FTC Pearl Harbor, except for its location, is typical of them all. It is located in the heart of the sugar-growing town of Aiea, on a hill overlooking the Navy's largest base in the Pacific. It has a staff of 9 officers and 78 enlisted men—whose experience, when added together, totals more than 10 centuries. It turns out about 1000 "graduates" a month from 53 courses that range in length from four hours to six weeks.

Since commissioning at its present site in 1948, FTC Pearl has given

more than six million hours of instruction to over 150,000 students.

At Pearl Harbor, as at all the other Fleet Training Centers, emphasis is on practical application rather than on theory. All the learning is aimed in one direction—to operate a warship with the highest possible peak of effectiveness.

Because our naval forces are now operating at sea more than ever before in peacetime, training ashore—especially training of a large segment of a ship's crew—can present a problem. Thus, the Fleet Training Centers are set up to train the sea-going sailors during short periods when they come into port. Their job is to provide training to ship's personnel as a unit of a ship's company, and it may consist of individual, group or team training.

When a ship is scheduled for a short visit to Pearl Harbor, the captain receives in advance a digest of the Fleet Training Center's curriculum. After reviewing the courses and facilities available, he selects certain members of his crew for training. Arrangements are then made with the Center's scheduling officer and when the men are enrolled, a smoothly functioning machine at FTC Pearl starts humming.

Buses pick up the student sailors after breakfast each morning at the

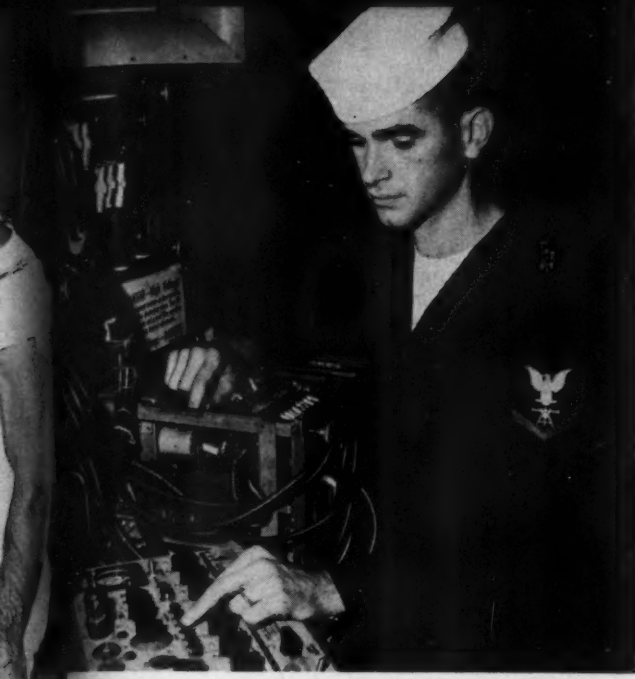
ship's gangway and take them to the classrooms at Aiea, about three miles away. They return to their ships at the end of each school day.

At the Fleet Training Center, shipboard, wartime and practical conditions are simulated as much as possible. For instance, in the Damage Control School, which offers two different courses, men in a mockup of a compartmented ship are required to work under realistic conditions and must fight inrushing water in order to shore up a "damaged" bulkhead. Failure to accomplish the job means a good soaking, and the only difference between the school and a stricken ship is that in the mockup, the water can be turned off.

Another true-to-life arrangement is used for training CIC teams. To give a CIC team the hours of practice it needs would involve sending a ship with its entire crew to sea for many days. That's an expensive and time-consuming process, so an economical solution to this is offered at the Fleet Training Centers which provide CIC training ashore.

The antisubmarine warfare training setup at FTC Pearl is also another big money and time saver. It duplicates actual shipboard equipment hooked up to units that allow shipboard teams undergoing training to "find," "track," and, if they are

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SHIP TO SHORE—F.T.C.s provide sailors at sea with specialized knowledge.

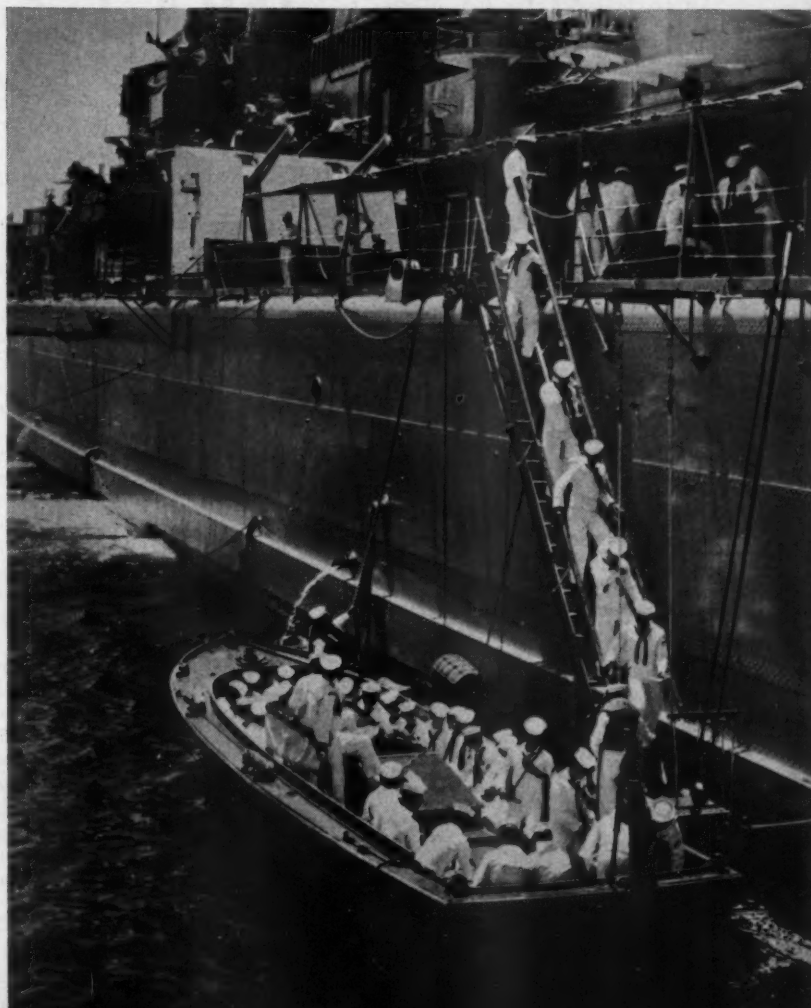
and Bus

lucky, to "kill" an enemy submarine. The ASW trainer contains over 250 miles of electrical wiring and nearly 1800 vacuum tubes, and it can handle up to four ASW teams at a time.

Not all the courses offered by FTC Pearl, however, use the intricate training devices such as those available for CIC and ASW instruction. The standard sound-powered telephone—used aboard most ships while mooring, getting underway, steaming at sea, and while in battle—is about the only piece of equipment used in the telephone talker course. The same equipment used during recruit training and found aboard all ships is also used for refresher training in fire fighting.

The young and the seasoned sailor alike learn at the Center. Officers are given refresher courses in Loran (Long Range Navigation) upon being ordered to sea after a stint ashore, while inexperienced seamen are trained on every-day procedures aboard ship.

Fleet Admiral Chester W. Nimitz, USN, gave the order that instituted a course in emergency ship handling at the Pearl Harbor Fleet Training Center. In the classrooms of this course, it's a common sight to see a veteran chief petty officer who is a skipper of a tug, sitting next to the four-striped skipper of a flattop. It



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BACK ON BOARD the Navyman puts to use the training he received at one of the Fleet Training Centers that all together teach 260 different courses.

is not unusual to have a CPO and a CAPT comparing notes on the performance of a commander who's sharpening his skills in handling a destroyer through the use of mockup equipment that simulates ship movements in response to rudder and engine orders.

Other branches of the armed forces also use the Center. Men from the many Army, Air Force and Marine installations in the Hawaiian Islands are sent to the Fleet Training Center for a course in defense against atomic weapons. Here, soldiers, airmen and Marines join sailors in learning how to remove atomic matter from contaminated clothing, to guard against absorbing excessive radiation, and how to clean areas hit by fallout so they can live, work and fight in them.

Sometimes intensive courses are given in the use of just one item of Navy equipment, such as the oxygen-breathing apparatus Navyman use to enter smoke-filled compartments, or the intricacies of unpublicized electronic devices.

In addition to the courses mentioned above, FTC Pearl conducts a two-week course for shipboard instructor training; 14 courses in gunnery; 14 in electronics, three in administration, military justice, and supply, and believe it or not, a three-day course in Cold Weather Indocination.

Here's a brief rundown of the Navy's four other Fleet Training Centers:

- **FTC SAN DIEGO** is located at Bldg. 55 at the U. S. Naval Station. Like Pearl Harbor, it provides training to individuals, groups and teams from the forces afloat. Sixty-five different courses are given.

FTC San Diego also conducts

pre-commissioning training to the extent permitted by available personnel and facilities. Its staff consists of 31 officers and 180 enlisted men.

During the past 11 months of fiscal '58, FTC San Diego has trained

more than 33,700 Navyman and 95 civilians. That's quite a number when you consider that no CIC or gunnery training is conducted at the San Diego Fleet Training Center. All CIC training on the West Coast is done at the nearby Fleet Air Defense Training Center, while the gunnery training is given at the Fleet Gunnery School.

- **FTC NEWPORT** maintains its headquarters in building 1200 at Coddington Point, near the Gunnery School at the Naval Base. Its staff of 34 officers and 115 enlisted men conduct a total of 61 different courses.

Training at Newport includes 24 courses in gunnery that range from a short ($\frac{1}{2}$ or 1 day) drill in 40mm loading to a three-day Range Finding Operation Course. Rifle, pistol and carbine varies from two days of familiarization to two weeks on the range in which a student may qualify as an expert on Course "A."

ADM Burke Said It — 'True Measure of Power'

"THROUGH TRAINING—SEAPOWERS."

That's the slogan of the Training Division of the Bureau of Naval Personnel—charged with the overall responsibility of seeing that you and your shipmates are properly trained.

Not only does that slogan represent the ultimate aim of all the efforts of the BuPers Training Division, but it is the keynote for the entire naval establishment as well. Admiral Arleigh Burke, USN, Chief of Naval Operations, summed that up when he said: *"The true measure of power in the Navy is in its trained manpower."*

Training begins the day a man enters the Navy and does not cease until the day he leaves. In the case of the career Navyman that training may last as long as 20 or 30 years. He'll be serving in various jobs ashore and afloat, but he'll be undergoing the training process, too.

VADM H. P. Smith, USN, the Chief of Naval Personnel, is in the training business (along with his other duties) to provide the qualified personnel needed to operate the many ships and the shore installations throughout the Navy. Admiral Smith has an Assistant for Education and Training, CAPT John R. Leeds, USN, who advises him on

basic, technical and specialized training, plus officer candidate, advanced, and postgraduate training for Regular and Reserve personnel. (Medical and aviation training programs are supervised by other bureaus.)

ALTHOUGH YOUR INDIVIDUAL ship or station is a part of the Navy's vast training establishment, the training program itself centers around the various functional training activities. The hub of enlisted training is at the Recruit Training Centers located at Great Lakes and San Diego, and more than 110 technical schools.

Enlisted personnel may also attend the various officer candidate schools such as the Naval Academy, NROTC units at 52 colleges in all parts of the country, and the OCS itself at Newport, R. I.

In addition, two new college programs for enlisted personnel—the Navy Enlisted Advanced School Program and the Navy Enlisted Scientific Education Program—were established during the past year in an effort to meet the increasing demand for engineers and scientists needed to cope with the complexities of modern warfare. (For more information see **ALL HANDS**, Aug. '58, page 48.)

While a large share of the workload at FTC Newport is devoted to the various phases of gunnery training, teams from the many destroyers based in that area keep ASW, CIC and Damage Control instructors on the run, teaching 27 courses—nine each in ASW, CIC and Damage Control. All the CIC training—including a two-week Electronics Countermeasure course for enlisted men and a four-week school for CIC teams—is classified.

The nine Damage Control courses feature basic, practical and advanced procedures and a one-day battle problem.

FTC Newport has trained more than 17,500 students during the past 11 months. It can accommodate classes numbering as few as one man in the five-day 3"/50 rapid fire operation course, to as many as 100 men in the 1-12 week Radio Operator Refresher Training. Classes on the

average, however, number between eight and 25 students.

• **FTC NORFOLK** is second in size only to FTC San Diego. Its staff consists of 205 officers and enlisted men who processed more than 33,150 students during the last 11 months. The 59 courses offered at Norfolk are similar to those given at the majority of the other Fleet Training Centers with the exception of seven "general" courses, five of which are in Special Weapons.

• **FTC CHARLESTON** has trained approximately 7000 Navymen and civilians in 39 courses during the past 11 months. Its staff consists of six officers and 56 enlisted men.

Whether it's FTC Charleston or Pearl Harbor, you can be assured that all five Fleet Training Centers, as streamlined "institutions of learning," are doing their job efficiently and effectively.

As is true of all Navy schools, they



FTC provides short courses to help train Navymen while ship is in port.

give their graduates a little more than just a bit of self education.

And everybody profits from the training—you, the Fleet, our allies, and us.—H. George Baker, JOC, USN.

—Robert D. Hoffman, JO3, USN.

of Power in the Navy Is in Its Trained Manpower'

Among the officers' schools are the advanced command and staff schools and colleges such as the Naval War College at Newport, R. I., and the Armed Forces Staff College at Norfolk. Postgraduate schools include the Line School at Monterey and the Intelligence School at Washington, D. C. A five-term college training program for officers is also provided at several colleges.

Then there are the functional training activities which offer specialized courses to both officer and enlisted personnel. As the name implies, functional training includes instruction at the various functional schools such as the Guided Missile School at Dam Neck, Va.; the Mine Warfare School at Yorktown, Va.; the Advanced Underseas Weapons School at Key West, Fla.; the Ship's Salvage School at Bayonne, N. J.; the numerous schools and courses offered in connection with new developments—and the Navy's 15 Fleet schools.

The Fleet schools are unique. They are under the military command of the operating forces but under the management control of the Chief of Naval Personnel. They provide training for personnel of the operating forces that cannot be

taught adequately aboard ship. Such training is designed to supplement the basic and technical training offered at the recruit training and service school commands and pertains to the training of ship's personnel as a unit of a ship's company.

Limited space aboard ship requires that every man aboard must be able to perform his twofold duties—his battle and his technical duties. For instance, during normal cruising aboard a destroyer a yeoman may be typing up the engineer's log, while the storekeeper is making up a stock report.

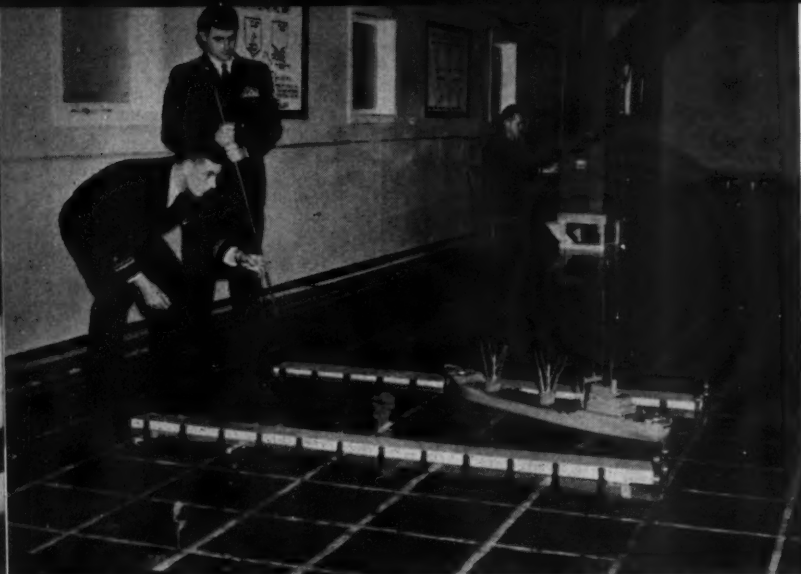
When the CO calls his crew to general quarters, these same petty officers become members of the team to fight the ship—range setters, ammunition handlers or telephone talkers—to name but a few of their combat jobs.

Today, as in the past, a Navymen must know the duties of his rating as well as those for his GQ or Condition Watches assignments. The many technical functions performed within the Navy generate needs for all the technical skills found in the work force of the nation. For example, the different skills performed by the 200-man crew of a DD are identifiable with more than 600 civilian skills. If you

took the 120 seamen aboard that same "can" you would find about 75 per cent of them performing routine seaman duties during normal cruising, while about four per cent would be assigned armament duties. At General Quarters, however, there is a complete change-over from seaman to gunnery duties—100 per cent are performing the latter.

It's the job of the Fleet schools to train the crews of Navy ships for their dual role. Although the majority of training applies to general shipboard subjects, some of it is of a specialized nature. The specialized phases of this training are conducted at the Fleet Air Defense Training Centers at Dam Neck, Va., and San Diego; the Naval Amphibious Bases at Coronado, Calif., and Little Creek, Va.; the Fleet Sonar Schools at Key West and San Diego; the Fleet Gunnery School at San Diego; the Submarine School at New London, Conn.; and the Fleet Submarine Training Facility located at San Francisco, Calif.

As you can see, training plays a big role in Fleet readiness—and we have barely touched on the basic program. It all adds up to that slogan worth mentioning again: "Seapower, through Training."



EASY DOES IT—Cargo ship is brought alongside. Right: T. Kessler, TD2, works on model of tug for trainer.

They Learn Ship Handling Ashore

EACH MONTH, more than 60 officers from the Amphibious Training Unit at Little Creek, Va., and from ships of the Amphibious Force, maneuver radio-controlled ship models in the Navy's Ships Characteristics Trainer.

This trainer, which is the only one of its type in operation in the Navy, is officially known as Training Device No. 1-DA-5. Actually, it is a 62x25-foot concrete basin in which radio-controlled models of Navy ships are put through the same paces as their life-size counterparts at sea. The six-inch deep basin is scaled to a depth of 37 feet. Its bottom is gridded for navigational calculation.

The two four-foot operating models currently in use at the basin are a destroyer escort and a cargo ship, scaled at one foot to 75 feet. The destroyer provides training in the problems encountered with twin-screw ship handling while the AK

offers single-screw training operation. Hulls of the model are constructed to respond exactly as do the real ones in speed and heading to a ship handler's commands.

Each model is powered by four small batteries providing an output of 25 volts. The destroyer is equipped with a 25-transistor radio receiver, while the cargo ship carries a 17-transistor set. As an additional feature, the AK sports a magnetically operated anchor for training in open water anchorage.

The models are capable of maintaining flank speed for six hours; the destroyer at a scaled 25 knots (1 to 75 ratio), and the AK at 11 knots. Both ships have run for 15 continuous hours under normal operating conditions without recharging.

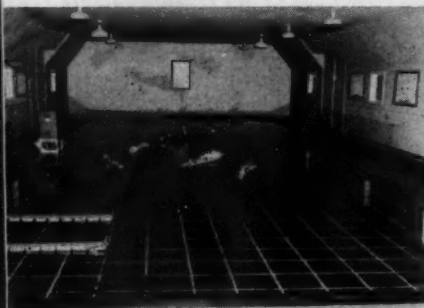
Although radio control of the models is maintained through three frequencies, only one model can be run through the console at one time.

Owing to the success of the trainer, requests have been made to the U.S. Naval Training Device Center on Long Island, N.Y., for operating models of the latest type LST and LSI. An experimental model tug boat is being constructed. All operating models are of fiberglass construction with the exception of the tug, which is of wooden hull design.

Officer students using the trainer give ship-handling commands orally to the operator of the console control panel and orders are transmitted electronically to models in the basin. Underway training is provided through two buoyed channels and two open water areas, while close maneuvering and berthing are accomplished by use of the basin's seven scale model piers. The outfit is complete with a magnetic mooring buoy and miniature island.

This unique device is used to indoctrinate officer students in the problems of ship-handling characteristics. In addition, prospective commanding officers and executive officers find the trainer invaluable as a refresher to "point up" special techniques of ship handling.

Continued use of this device by officers of the Amphibious Force will undoubtedly develop skills and abilities in junior officers, and result in considerable financial saving in costs of similar training which would otherwise necessarily be conducted at sea. —R. G. Sargent, JOC, USN.



'POOL HALL'—Training pond fills room. Rt: Conning model through channel.

Meet Comet — She's Navy's New Roll-On, Lift-On AK

The revolution in design exemplified by today's nuclear submarines, super carriers and guided missile cruisers is now being sported by one of the Fleet's auxiliaries, the roll-on, roll-off cargo ship USNS *Comet* (T-AK 269).

This prototype ship does not feature a new weapons system or a new concept in propulsion. Rather, it features methods of putting specialized cargo ashore in the fastest possible time. In this case, wheeled vehicles are the cargo.

Capable of carrying one-sixth of the vehicles attached to an Army division, *Comet* is the result of more than three years of unified study by the Military Sea Transportation Service, Bureau of Ships, Army Transportation Corps and the private marine industry. MSTS was seeking a cargo ship for wheeled vehicles that would reduce the loading and unloading time; provide a shorter turn-around time between ports; provide a means of lifting cargo (trailer trucks) without breaking bulk; and eliminate the need for cranes at either end of the voyage.

Comet provides all this. Four side-port loading ramps allow vehicles ranging in size from a jeep to a loaded tractor trailer or a tank to be driven onto the ship under their own power and proceed directly to the spot where they will be parked during the voyage. A fifth hydraulic ramp is located in the stern.

A vehicle loaded aboard over the stern will be driven up the ramp and forward along the second deck to midships. There it can go down a ramp into the lower levels of the forward hold, or pass over a bridge ramp and into the second deck level of the aft hold, or go up from the forward hold to the main deck. If the

operator of the vehicle is ordered to a parking spot on a lower level, he will follow a corkscrew path down deck-by-deck to his assigned area guided by a traffic control system. The process is reversed when *Comet* unloads and the tanks roll ashore ready for combat and the cargo trucks ready to join a convoy headed for a nearby front.

Launched in mid-1957, the 499-foot ship has a beam of 78 feet and a full load displacement of 16,150 tons. A normal shaft horsepower of 12,000 drives her through the water at a speed of 18 knots. Sixteen officers and 35 men constitute the normal complement of the ship which has 22 cargo booms and 61 winches. *Comet's* two large vehicle holds (each 75 by 128 feet) can accommodate a large portion of the 378 or more vehicles that the ship can carry.

This prototype of cargo ships of the future is propelled by two shafts turning 16-foot solid bronze screws. These shafts are turned by single-cylinder geared propulsion turbines. *Comet* is the first ocean-going vessel of U. S. registry to employ this system since World War I.

In the single-cylinder design, the high-pressure, low-pressure and astern turbines are in one casing, a method which saves space and weight and simplifies installation problems. On *Comet* this system replaces the cross-compound steam turbines which power most ocean-going vessels.

The cargo handling system (four 10-ton conventional rigged booms; 14 specially rigged 15-ton booms; two 15-ton booms, conventionally rigged; and two 60-ton specially-rigged booms) gives *Comet* dual capabilities. Not only can vehicles

be driven on board, but cargo may also be lifted on for stowage in the two holds forward or in the vehicle parking spaces.

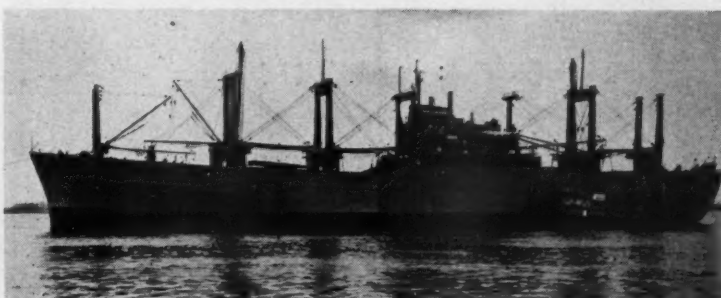
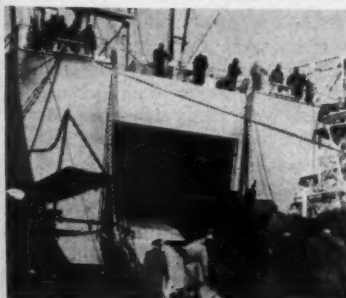
Designing the ship was a major project because maneuvering room had to be provided for the various types of vehicles that would board the ship. In order to do this a mock-up of the ship's decks was laid out full scale on a concrete surface. The bulkheads, side ports, internal ramps, stanchions, vent trunks, etc., were painted on the surface. Vehicles of various types and sizes were driven through the mock-up to check clearances, turning radius and capacity.

Plenty of ventilation was planned into the ship. One system to discharge exhaust gases and another to provide fresh air were installed during construction, in addition to a gas detection system which keeps a sharp lookout for leaking fuel tanks and exhaust fumes. A giant-size drainage system carries away washed-down spilled gasoline, mud and grease. In addition, the entire interior of the ship is protected by a carbon dioxide fire-extinguishing system.

Portable tire-pumping equipment and battery chargers are included in the ship's equipment along with electric car pullers installed at the top of each ramp which will pull vehicles up the 14-degree slopes.

The crew is provided with modern accommodation including two-man rooms, recreation spaces and fluorescent-type electric lighting.

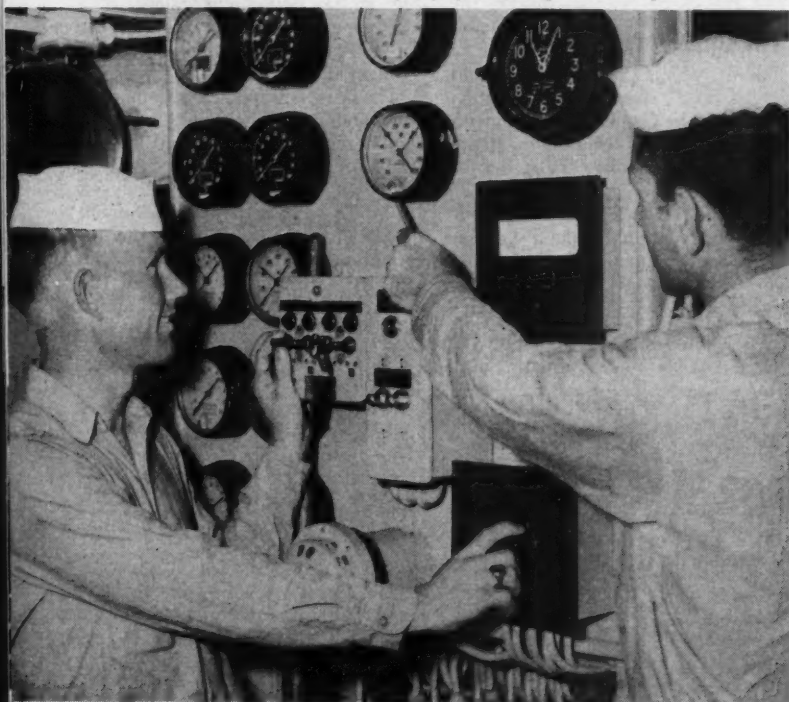
Comet is being closely analyzed by MSTS so that they may evaluate its potentialities and make the information available to the marine industry and other branches of the armed forces. If you should notice USNS *Comet* at sea, take a second look—you are looking at tomorrow.



LET 'EM ROLL—USNS *Comet* (T-AK 269) has five ramps for drive on and off loading and unloading of vehicles.



SEA SIDE—Reservists may apply for two weeks' active duty training cruise in Navy ships to help them keep up proficiency in their particular skill.



Here's Howth

WHEN Charlie Q. Stuart, GM3, USNR, returns to inactive duty, the chances are he'll have a military obligation requiring him to remain a member of the Naval Reserve for a certain period of years.

Stuart is just one of thousands of Naval Reservists who form the bone and muscle ready to strengthen the Regular Navy in the event of a national emergency.

If you take a look around your own ship, you'll see that many Naval Reservists remain on active duty well beyond their normal active duty tours. Some of them become Navy-men, enlisting in the Regular Navy or obtaining USN commissions through the augmentation program. At the present time, approximately 26,000 Naval Reserve officers are serving on active duty—making up more than a third of the Fleet's officer strength. Some 56,000 enlisted Reservists are on active duty representing roughly one-tenth of the total active enlisted strength.

Of course, the bulk of the members of the Naval Reserve are on inactive duty. Here's a breakdown, based on current figures: There are 147,000 Reserve officers on inactive duty; there are also 37,000 retired Reserve officers.

Almost 480,000 enlisted Reservists are on active duty and there are approximately 1600 retired enlisted Reservists. To these figures, you should add about 6100 officer candidates, most of whom are midshipmen in the Naval Reserve.

How does a Reservist on inactive duty maintain his proficiency? Suppose, like Stuart, he serves a few years on active duty, advances to PO3, and then "goes inactive." He's got his basic training in now, but will he be ready for an emergency two, or three—or more—years from now?

If he takes an active part in the Naval Reserve training program he'll be ready—just as thousands of Reservists were ready when the Korean conflict broke out.

There are several means by which Reservists can "keep in shape," Navy-wise, on inactive duty. They may join Reserve units in their areas and drill regularly, thus keeping abreast of the latest developments in their specialties. They may apply for two

How the Reserves Back Up the Fleet

weeks' active duty for training (AcDuTra), and cruise in Navy ships or fly in Navy aircraft. They may take correspondence courses; they may perform "appropriate duty."

In recent months, a new concept known as the "Selected Reserve" has been developed. It is designed to increase the capabilities and readiness of the Naval Reserve.

Within the Selected Reserve there are now four "components":

- **Antisubmarine Warfare (ASW)** (Surface and Air);

- **Active Fleet Augmentation Component**, which includes Surface, Air, Electronics, Submarine, and Hospital Corps units;

- **Fleet Support Activities Component**, which includes seven Reserve training programs—Amphibious Beach, Ships Supply Officer, Construction Battalion, Advanced Base Command, Harbor Defense, Ship Activation Team and Military Sea Transportation; and

- **Shore Establishment Component**, made up of six training programs—Mobilization Team, Marine Terminal Management, Intelligence, Censorship, Selective Service and Naval Security Group.

Reservists in these components will be "pre-processed." They'll have their orders to active duty in hand so that they can report for duty within a few hours at the outbreak of hostilities involving the United States.

There are 19 "specialist" programs in the Naval Reserve—ranging from BuShips to Supply Corps, from Law to Ordnance, from Naval Research to Public Relations.

Some of these are "pay" programs—members of pay units receive one day's pay for each drill attended. Others are "nonpay"—strictly volunteer. Units in the drill pay programs are authorized either 48 or 24 drills with pay each year. Frequency of drills by nonpay units may vary, but most nonpay programs fall into the 24- or 48-drill pattern.

A number of programs conduct drills on a weekly basis. Others hold multiple drills—two drills in one day, each of at least four hours' duration. Still other programs—notably the Naval Air Reserve and components of the Selected Reserve—conduct drills that last over the weekend.

The trend today is toward more and more "multiple drills," conducted over weekends, and all programs are authorized to hold multiple drills.

Annual active duty for training is another important means of maintaining proficiency. Members of "Reserve Crews" in the ASW Component, for example, spend their two weeks cruising on board their regularly assigned Selected Reserve ship. Air Reservists train with their squadrons.

Some Reservists attend specialized training programs at various Navy activities.

Certain Naval Reservists may perform "appropriate duty." Examples of appropriate duty include attendance at symposiums conducted by the armed forces in professional or technical fields, or serving as the commandant's local representative in Navy matters.

Reserve doctors perform appropriate duty by conducting physical

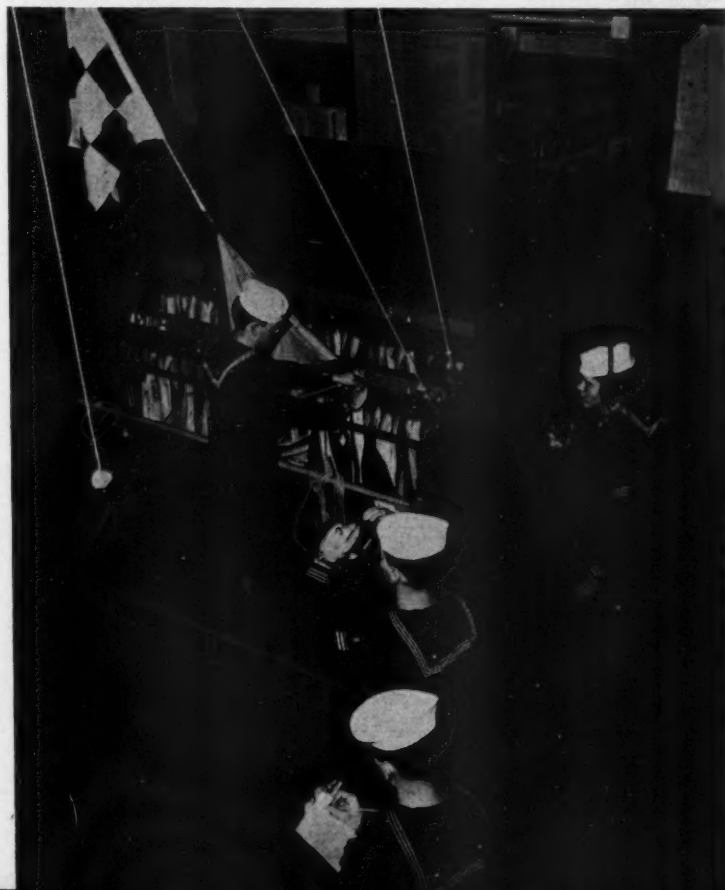
examinations and providing essential medical services.

Correspondence courses—for officers and enlisted Reservists—are another popular method of keeping up with the active Fleet. There are approximately 250 Enlisted Correspondence Courses—administered by the Correspondence Course Center, Scotia, N.Y. There are some 100 Officer Correspondence Courses. Most of these are also handled by the Correspondence Course Center but some are processed by BuMed, CNO, the Naval War College, Intelligence School, Submarine School, and Industrial College of the Armed Forces.

All correspondence courses are reviewed frequently and revised as the need arises, so that those who take the courses will be kept aware of the latest technological advances.

How does a Reservist benefit from his participation in the training programs? There are many answers to the "what's in it for me?" question.

LIKE REAL — Signaling with mock-up of flaghoist during drill periods keeps these Reserve signalmen in the know-how while in civilian life.





OFF HE GOES—Radio operator from Naval Air Reserve squadron mans his station while Reserves take R5D on training flight to far-off French Morocco.

Let's look at the tangibles first:

- If our Ready Reservist, Stuart, joins a drill pay unit, he will receive one day's pay for each drill he attends. He'll get paid for each day of AcDuTra, including travel time. (Standby Reservists, less vulnerable for recall to active duty, do not receive pay for attending drills or AcDuTra.)

- Reservists who continue their affiliation add years of service to their records for pay purposes. And that's not all. By attending drills, going on AcDuTra, taking correspondence courses, performing appropriate duty, Reservists also earn credit toward retirement. Reservists who accumulate 20 years of satisfactory federal service through their Reserve participation are eligible for retirement pay when they reach age 60.

- A Reservist on inactive duty may qualify for advancement or promotion through his participation.

- Reservists who take part in active duty for training are covered by Social Security during AcDuTra periods and may thus add to their retirement or survivors' benefits.

- If the Reservist should die while on active duty, AcDuTra, or while attending a drill, survivors of Reservists are aided by the "six months' death gratuity." This coverage extends to necessary travel in-

volved in reporting for, or returning from, active duty, AcDuTra, or inactive duty training.

There are "intangibles," too, of course. It's hard to measure the satisfaction in knowing you're part of the nation's armed forces, that you are trained and ready for an emergency "if and when." Numerous Reservists say they attend drills and take part in AcDuTra simply because they like the Navy and the association with other Navymen such training provides.

Many Reservists, of course, have specific military obligations to fulfill. Those who entered the service before 10 Aug 1955 have an eight-year service obligation; those who entered on or after that date have a six-year obligation.

Most Reservists must spend a portion of this time in the Ready Reserve. Members of the Ready Reserve are immediately available for active duty during a national emergency.

They may be ordered to active duty in time of war or national emergency declared by Congress or proclaimed by the President, or when otherwise authorized by law, such as the Universal Military Training and Service Act.

When Reservists complete their Ready Reserve time, they may sign agreements to remain in the Ready

Reserve for specified periods or they may be transferred to the Standby Reserve for the remaining period of obligated service.

Standby Reservists are those who are available for active duty in time of war or national emergency declared by Congress or when otherwise authorized by law. However, they cannot be ordered to active duty involuntarily until the Director of Selective Service determines they are available for active duty. Standby Reservists are not authorized to receive pay for taking part in the training program.

By now, no doubt, you've decided that the Reserve program is vast and complex. Perhaps you wonder how a Reservist keeps track of his status, or how the many links in the chain fit together.

Out in Omaha, Nebr., there is an organization known as the Reserve Officers' Recording Activity. Here the performance records of some 225,000 USNR officers are kept up to date, for RORA maintains the performance records of all Reserve officers on active or inactive duty. Points are assigned for drill attendance, AcDuTra, extended active duty, appropriate duty, and equivalent training such as correspondence courses. Once a year, RORA will send a statement showing retirement and promotion point credits to each Reserve officer who requests the statement.

RORA is also an important link in the Reserve officer promotion system. When an officer enters a promotion zone, RORA advises the Chief of Naval Personnel whether the officer meets the requirements for consideration for promotion. If the officer is eligible and is selected, RORA then determines whether the officer has earned enough promotion points to qualify for promotion. If the officer lacks the proper number of points, he will be advised of the number he must have in order to qualify for promotion.

A classification department was recently added to RORA's mission. It will have the task of evaluating and classifying naval and civilian qualifications of all officers on inactive duty.

The new department will also help select qualified personnel to fill specialized billets and will provide qualification information for mobilization planning and training needs.

Enlisted Reservists have no coun-



READY TO GO — New 'Select Reserve' will carry active duty orders so they can report to duty within hours.

terpart to RORA. Many can get the word on their status directly from the commanding officer of their unit under those conditions when he maintains their records. Other enlisted Reservists are given the necessary information by their commandants.

The commandant of each naval district maintains records of Reservists under his jurisdiction. If an enlisted Reservist wants to know how many retirement points he has been credited with—or how many years of satisfactory federal service he has accumulated—he can obtain this data from his commandant.

Commandants of naval districts are like the head of a big family. They must feed and clothe those under their command. They oversee the "education" of the members of their "family." They also have to provide quarters, for them when necessary.

The commandants also maintain close liaison with Reservists in their districts. They are responsible for the distribution of the monthly periodical, *The Naval Reservist*, to all Reservists on inactive duty. (This publication is also available to Reservists on active duty and is distributed to the active Fleet in the same manner as *ALL HANDS*.) Commandants also publish their own newsletters which are distributed to members of drilling units. They write individual letters to Reservists, advising them of changes in policy. They process requests for training. Very often, they act as a real-life father, helping Reservists in individual, personal matters, such as providing application forms for state

veterans' bonuses for Reserve units.

There are other important links in the Naval Reserve chain. The training of all Reservists—except Air Reservists—is under the direction of the Commander, Naval Reserve Training Command, who is headquartered in Omaha. He works through the commandants, planning and supervising training, assigning ships for cruises, and so on. He conducts inspections of Reserve units, to check up on the progress of training.

CNRT's opposite number is the Chief of Naval Air Reserve Training, with headquarters at NAS Glenview, Ill. He is responsible for the training of all Reservists in the aviation

branch of the Navy. In many instances, he performs for air Reservists the same functions district commandants perform for surface and submarine Reservists.

Over-all policy, of course, is established by the Chief of Naval Operations, who keeps in close touch with the Reserve programs through DCNO (Personnel and Naval Reserve) and DCNO (Air).

There—somewhat over-simplified—you have a picture of today's Naval Reserve. The program is a dynamic one—constantly undergoing modifications to improve training and enhance the state of readiness of all Reservists. It's a workable program, too, as history has proved.

SUB RESERVE MEN work with Regular Navymen on board USS *Bugara* (SS 331) while on AcDuTra for antisubmarine warfare training exercises with Fleet.

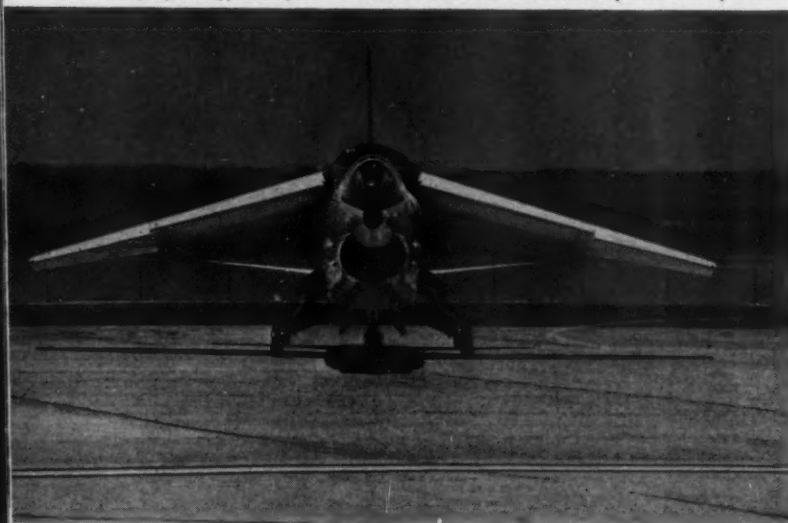




Mark III Crusader Gets a Te



WHEEL GONE—Shark-nosed, swept-wing Crusader (above) is shown with her landing gear partially extended. Crusader I (below) poses for portrait.



A shark-nosed, swept wing airplane capable of combat speeds of more than twice that of sound and able to perform effectively above 95 per cent of the earth's atmosphere on the edge of space has made its first test flight.

The plane is the F8U-3, the third model of the high performance *Crusader* which is now operating with our carrier striking forces. Equipped with the newest, most versatile electronic equipment ever built into a Navy fighter, plus the latest "weatherproof" guided missiles, the F8U-3 will provide a virtually invisible protective screen hundreds of miles from the Fleet.

Flown largely through the use of push-buttons, the new interceptors will give the Fleet a true all-weather fighter capable of protecting a task force and its early warning planes from the fastest enemy aircraft at high altitudes and long range.

Although performance figures are classified, Navy officials have said that the *Crusader III* can outrace the sun across the continent. It can zoom to altitudes above the stratosphere and remain aloft for more than three hours without refueling or carrying external fuel tanks. Its long range and accuracy, combined with the skilled judgment of its pilot, add up to a potential beyond that of any known aerial defense missile today.

Designed into the plane to allow the pilot maximum concentration on his mission are an advanced automatic flight control system and an airborne missile control system. With these, the pilot can go where he wants to go, do what he wants to

do—largely by pushing buttons.

To climb to altitude from a carrier, the pilot can push a "Mach hold" button and ascend at a desired rate and angle. To cruise, he can engage an "altitude hold" button. To fly toward a given point he pushes a button which will hold his heading. And, to change his heading, he can dial a "heading select indicator."

To orbit over a given point he can also use push buttons and the aircraft controls automatically do the rest.

An "anticipatory G limiter" prevents maneuvers which would place too great a stress on the aircraft and

aTest Run

a "roll rate limiter" insures that the aircraft performs in the desired fashion without deviations which could lead to loss of control.

Other safety features prevent over-travel of control mechanisms, sense troubles or malfunctions in certain circuits and provide corrective action.

Armament on the F8U-3 consists of *Sparrow III* missiles, heat-seeking *Sidewinder* missiles or a combination of the two. The aircraft also has broad growth potential: It can be adapted to carry special weapons, electrical intelligence equipment, photo reconnaissance equipment or external fuel tanks.

In carrying out typical interceptor missions, the aircraft can cruise at high altitude, far from the task force, ready to destroy an invader, or it can be poised on the ship's catapults, ready at an instant's notice to be launched against attacking enemy bombers.

Miles from the target, the pilot locks his radar on the target, still merely a dot in the fighter's radar scope. As the scope indicates target direction, computer equipment provides accurate sighting. At proper range, also shown on the scope, the pilot launches guided missiles capable of destroying the largest bomber. A flashing light warns the pilot when to break away to avoid danger of collision while the missiles are guided to their target.

Like its predecessor, the F8U-1, the new fighter incorporates a two-position wing which makes it possible to fly at extremely high speeds and yet land on the deck of a carrier.



CRUSADER PILOTS discuss day's flight experiences in carrier's ready room.

Supplementing this wing feature is a boundary layer control system which blows air at high speeds over the flaps, giving the pilot more effective control during the approach to landing.

For ease of maintenance the aircraft uses a package concept for its advanced electronics equipment. This permits rapid checkout, troubleshooting and quick removal and replacement when necessary, at a greatly reduced maintenance cost.

The new *Crusader* uses the J-75 jet engine which develops nearly 26,000 pounds of thrust. Although its control system represents a tre-

mendous advance in autopilot design, all elements have been thoroughly monitored and tested to insure reliability.

In physical appearance, the F8U-3 resembles the F8U-1 but is slightly larger. Most noticeable differences are in its longer pointed nose, its forward-swept air scoop and two movable ventral fins located toward the tail. These fins extend horizontally in low-speed flight and are turned downward at an angle of nearly 90 degrees to give additional stability at the very high Mach number speeds at which this third model of Navy's *Crusader* fighter operates.

ON DECK — *Crusader I* planes, like these on USS *Saratoga*, are operational.





Try Your Luck with This All-Navy Quiz

After you've been around this man's Navy for a while, it's pretty hard not to become interested in what has gone on before. It begins to grow on you and, first thing you know, you realize that not all history is found in history books. A large share of the sea stories you hear kicked around in the bull sessions are the raw—in more than one way—material of which future history is made. Or perhaps you will run across a casual reference to some "unapproachable" hero who missed ship after liberty and you realize he's not so unapproachable after all. He's just an ordinary person, like you.

It happens that Captain F. V. Rigler, USN (Ret.) of Annapolis, Md., has developed into quite a history buff and like all good enthusiasts, wants to convert others to his own special interests. His efforts have taken the

form of the quiz below. It's not easy but it is fun.

At first glance, the ALL HANDS staff was inclined to feel that perhaps Captain Rigler was dishing out too many tough ones. Two hours later, after all hands had retired to their respective desks, one journalistic genius realized that, quiz or no, Captain Rigler had uncovered a fine source of countless fantail arguments.

If you want to run up an official score, here's how.

Score .1 for each question answered correctly. If, after adding your correct answers, you have between 3.4 and 4.0, you should write a quiz yourself; from 3.0 to 3.4, you can throw out your chest; 2.5 to 3.0, nice going; and below 2.5, well, you've had fun. In this test, there are no failures.

You'll find the answers on page 56. Carry on.

- The first commander in chief of the American Navy appointed by the Continental Congress was:
 - Nicholas Biddle
 - John Paul Jones
 - Esek Hopkins
 - Abraham Whipple
- Line up the American ship in the left column with the ship with which it engaged shown in the right column.

1. Constellation	1. Guerriere
2. Bon Homme Richard	2. Insurgent
3. Ranger	3. Drake
4. Constitution	4. Serapis
- The Stars and Stripes were first saluted as a national flag by the guns of a foreign navy when flown from:

1. Randolph	3. Alfred
2. Ranger	4. Congress
- Associate properly the following men and ships.

1. Decatur	1. Albemarle
2. Cushing	2. Monitor
3. Worden	3. Philadelphia
- Before the formation of the Bureau of Naval Personnel, personnel affairs of the Navy were administered by:
 - Bureau of Supplies and Accounts
 - Bureau of Ordnance
 - Bureau of Navigation
 - Bureau of Engineering
- Which of the following ships did not see action in Cuban waters during the Spanish-American War?

1. USS Oregon	3. USS Olympia
2. USS Brooklyn	4. USS Gloucester
- Severely damaged in a fight in the Java Sea in WW II, the ship below was able to return to the U. S. via South Africa.

1. Franklin	3. Houston
2. Trenton	4. Marblehead
- One of the officers below has not been a member of the Joint Chiefs of Staff. He is:

1. Carney	4. Nimitz
2. Burke	5. Forrest Sherman
3. Fechteler	6. Halsey
- Which of the following ships was lost in the Battle of Midway?

1. USS Saratoga	4. USS Yorktown
2. USS Hornet	5. USS Princeton
3. USS Enterprise	
- Associate the below ships with the officers listed.

1. Farragut	1. Alabama
2. Buchanan	2. Hartford
3. Semmes	3. Tennessee
- Two of the following officers were members of the Korean Truce Negotiation Team:

1. Stump	4. Briscoe
2. Joy	5. Doyle
3. Burke	6. Hoskins





12. The first planes to bomb the Japanese homeland in WW II took off from the:

- | | |
|------------------------|--------------------------|
| 1. <i>uss Saratoga</i> | 4. <i>uss Hornet</i> |
| 2. <i>uss Essex</i> | 5. <i>uss Enterprise</i> |
| 3. <i>uss Wasp</i> | 6. <i>uss Yorktown</i> |

13. Which of the below ships was not lost in the Battle of Savo Island?

- | | |
|-------------------------|---------------------------|
| 1. <i>uss Astoria</i> | 3. <i>uss Northampton</i> |
| 2. <i>uss Vincennes</i> | 4. <i>uss Quincy</i> |

14. One of the following officers (Army) commanded a small naval group which saw action in the Revolutionary War:

- | | |
|--------------------------------|---------------------------|
| 1. <i>Lighthorse Harry Lee</i> | 3. <i>Anthony Wayne</i> |
| 2. <i>Ethan Allen</i> | 4. <i>Benedict Arnold</i> |

15. The American Naval Commander of the North African and subsequent Mediterranean landings on Sicily, Salerno, and Southern France was:

- | | |
|--------------------|------------------|
| 1. <i>Kirk</i> | 4. <i>Hewitt</i> |
| 2. <i>Connelly</i> | 5. <i>Lowry</i> |
| 3. <i>Hall</i> | |

16. In the summer and autumn months of 1918 the American Forces laid the following numbers of mines in the North Sea Barrage.

- | | |
|-----------|-----------|
| 1. 25,402 | 3. 78,004 |
| 2. 92,107 | 4. 56,611 |

17. Sunk by the Japanese on the Yangtze River in 1937 was:

- | | |
|---------------------|------------------------|
| 1. <i>uss Luzon</i> | 3. <i>uss Mindanao</i> |
| 2. <i>uss Panay</i> | 4. <i>uss Guam</i> |

18. Which one of the below battleships did not operate with the Grand Fleet in WW I?

- | | |
|------------------------|------------------------|
| 1. <i>uss Delaware</i> | 4. <i>uss Nevada</i> |
| 2. <i>uss New York</i> | 5. <i>uss Florida</i> |
| 3. <i>uss Wyoming</i> | 6. <i>uss Arkansas</i> |

19. The first flag officer to lose his life in WW II was:

- | | |
|-----------------|---------------------|
| 1. <i>Scott</i> | 3. <i>Callaghan</i> |
| 2. <i>Kidd</i> | |

20. Naval Commander of Federal Naval Forces in the operations against Fort Fisher, N. C., in the Civil War was:

- | | |
|-----------------------------|-------------------------------|
| 1. <i>David D. Porter</i> | 3. <i>John A. B. Dahlgren</i> |
| 2. <i>David G. Farragut</i> | |

21. Although the Naval Reserve was first authorized by Congress in 1915, this organization was the outgrowth of various States' Naval Militia, armed and equipped by Congressional appropriations in:

- | | |
|---------|---------|
| 1. 1875 | 3. 1904 |
| 2. 1899 | 4. 1891 |

22. "Father of the Naval War College" was:

- | | |
|---------------------------|------------------------------|
| 1. <i>Alfred T. Mahan</i> | 3. <i>William T. Sampson</i> |
| 2. <i>Stephen B. Luce</i> | 4. <i>A. M. Knight</i> |

23. "We are ready now, sir," is attributed to:

- | | |
|----------------------------|---------------------------|
| 1. <i>W. S. Halsey</i> | 3. <i>J. K. Taussig</i> |
| 2. <i>Charles E. Clark</i> | 4. <i>John Paul Jones</i> |

24. Which of the following officers addressed the President directly on the poor state of naval gunnery?

- | | |
|--------------------|----------------|
| 1. <i>Rodman</i> | 4. <i>King</i> |
| 2. <i>Schley</i> | 5. <i>Sims</i> |
| 3. <i>Dahlgren</i> | |

25. Sunk by mines laid by a German U-Boat in Long Island waters in 1918 was:

- | | |
|---------------------------|-----------------------|
| 1. <i>uss San Diego</i> | 3. <i>uss Chicago</i> |
| 2. <i>uss Minneapolis</i> | 4. <i>uss Atlanta</i> |

26. Associate the following officers and ships properly:

- | | |
|---------------------------|-----------------------|
| 1. <i>Robert Peary</i> | 1. <i>Lawrence</i> |
| 2. <i>Oliver H. Perry</i> | 2. <i>Roosevelt</i> |
| 3. <i>M. C. Perry</i> | 3. <i>Susquehanna</i> |

27. Check two of the below carriers which engaged in the Battle of the Coral Sea:

- | | |
|---------------------|--------------------|
| 1. <i>Saratoga</i> | 4. <i>Yorktown</i> |
| 2. <i>Lexington</i> | 5. <i>Hornet</i> |
| 3. <i>Princeton</i> | 6. <i>Essex</i> |

28. First plane to fly from America to Europe was the:

- | |
|---|
| 1. <i>NC-3 commanded by CDR J. H. Towers</i> |
| 2. <i>NC-4 commanded by LCDR A. C. Read</i> |
| 3. <i>Josephine Ford commanded by LCDR R. F. Byrd</i> |

29. Which one of the below officers has not held the office of Chief of Naval Personnel?

- | | |
|--------------------------|-----------------------------|
| 1. <i>John W. Roper</i> | 3. <i>David W. Taylor</i> |
| 2. <i>Randall Jacobs</i> | 4. <i>James L. Holloway</i> |

30. In command of American Naval Forces at the Battle of Lake Champlain was:

- | | |
|--------------------|----------------------|
| 1. <i>Lawrence</i> | 3. <i>Macdonough</i> |
| 2. <i>Perry</i> | 4. <i>Hull</i> |

31. Check two of the below officers who hold 5-star rank:

- | | |
|--------------------|-------------------|
| 1. <i>Radford</i> | 4. <i>Brown</i> |
| 2. <i>Nimitz</i> | 5. <i>Leahy</i> |
| 3. <i>Spruance</i> | 6. <i>Kinkaid</i> |

32. Check the name of the following man who did not hold the office of Assistant Secretary or Under Secretary of the Navy:

- | | |
|---------------------------------|---------------------------|
| 1. <i>Franklin D. Roosevelt</i> | 3. <i>Claude Swanson</i> |
| 2. <i>Theodore Roosevelt</i> | 4. <i>James Forrestal</i> |





33. Task Force Commander of the Japanese Force which attacked Pearl Harbor was:

- | | |
|-------------------|---------------------|
| 1. Admiral Nomura | 3. Admiral Kurita |
| 2. Admiral Nagumo | 4. Admiral Yamamoto |

34. In the Korean War, which of the below cities was evacuated, with U. S. naval support, under enemy pressure?

- | | |
|------------|-----------|
| 1. Pohang | 3. Inchon |
| 2. Hungnam | 4. Pusan |

35. The Navy Department was first established and the Secretary given cabinet rank in:

- | | |
|---------|---------|
| 1. 1798 | 3. 1801 |
| 2. 1788 | 4. 1792 |

36. Cruising from San Francisco around Cape Horn to the Caribbean to assist in the action in the Spanish-American War was the:

- | | |
|--------------------------|----------------------|
| 1. <i>uss Merrimac</i> | 3. <i>uss Texas</i> |
| 2. <i>uss California</i> | 4. <i>uss Oregon</i> |

37. The "Monitor" of Civil War fame was the invention of:

- | | |
|-------------|-------------|
| 1. Worden | 3. Fiske |
| 2. Melville | 5. Ericsson |
| 3. Taylor | |

38. Connect the below names with the proper non-naval position held:

- | | |
|-------------------------|-------------------------------|
| 1. ADM Thomas C. Hart | 1. Ambassador |
| 2. ADM William D. Leahy | 2. Cabinet Member |
| | 3. Civil Service Commissioner |
| | 4. Representative |
| | 5. Senator |

39. Makassar Strait was a naval action involving principally:

- | | |
|---------------|----------------------|
| 1. Cruisers | 3. Aircraft Carriers |
| 2. Destroyers | 4. Battleships |

40. Which of the following dirigibles was not destroyed by disaster?

- | | |
|----------------|----------|
| 1. Los Angeles | 3. Akron |
| 2. Shenandoah | 4. Macon |

41. Mysteriously lost at sea during WW I was the:

- | | |
|-----------------------|----------------------------|
| 1. <i>uss Antiles</i> | 3. <i>uss Cyclops</i> |
| 2. <i>uss Jupiter</i> | 4. <i>uss Reuben James</i> |

42. First carrier sunk by "kamikaze" attack was:

- | | |
|---------------------------|---------------------------|
| 1. <i>uss Gambier Bay</i> | 3. <i>uss Guadalcanal</i> |
| 2. <i>uss Suwanee</i> | 4. <i>uss St. Lo</i> |

43. Associate properly the commanding officers of these enemy ships:

- | | |
|--------------|---------------|
| 1. Barreault | 1. Serapis |
| 2. Pearson | 2. Guerriere |
| 3. Dacres | 3. Insurgente |

44. Which of the vessels listed was not a Confederate commerce raider?

- | | |
|---------------|------------|
| 1. Atlanta | 3. Florida |
| 2. Shenandoah | 4. Alabama |

45. Damaged in the battle for Leyte Gulf and later blown up was the carrier:

- | | |
|-------------------------|---------------------------|
| 1. <i>uss Wasp</i> | 3. <i>uss Franklin</i> |
| 2. <i>uss Princeton</i> | 4. <i>uss Bunker Hill</i> |

46. The rank of Rear Admiral was established in:

- | | |
|---------|---------|
| 1. 1799 | 3. 1848 |
| 2. 1813 | 4. 1862 |

47. Associate the two incidents below with the officers involved:

- | | |
|---------------------|-----------------------|
| 1. "Trent Affair" | 1. James Biddle |
| 2. "Foxardo Affair" | 2. William Bainbridge |
| | 3. Charles Wilkes |
| | 4. David Porter |
| | 5. Mathew Perry |

48. In command of North Atlantic Squadron, in the Spanish-American War was:

- | | |
|------------|------------|
| 1. Sampson | 3. Schley |
| 2. McNair | 4. Sigsbee |

49. The Secretaries of State and Navy were killed during trials of a new gun in 1844. The gun, called the "Peacemaker," was installed on:

- | | |
|----------------|--------------|
| 1. Mississippi | 3. Princeton |
| 2. Missouri | 4. Somers |

50. Damaged by a radio-guided bomb at Salerno landing in 1943 was the:

- | | |
|----------------------------|------------------------|
| 1. <i>uss Philadelphia</i> | 3. <i>uss Brooklyn</i> |
| 2. <i>uss Boise</i> | 4. <i>uss Savannah</i> |

51. The first operation undertaken against the British by the Continental Navy under Esek Hopkins took place in:

- | | |
|----------------|----------------------|
| 1. Bermuda | 3. Chesapeake Bay |
| 2. The Bahamas | 4. Charleston, S. C. |

52. The ships *Pittsburg*, *Cairo*, and *Benton* were involved in an engagement at:

- | | |
|----------------|---------------|
| 1. Fort Fisher | 4. Mobile Bay |
| 2. Vera Cruz | 5. Manila Bay |
| 3. Yazoo River | |

53. The first successful flight of a plane from the deck of an American warship was made by:

- | | |
|------------|-----------|
| 1. Langley | 4. Bennet |
| 2. Curtiss | 5. Martin |
| 3. Ely | |

54. In command of the squadron despatched in 1803 to defeat the Barbary States was:

- | | |
|-------------------|-----------------------|
| 1. Edward Preble | 3. John Barry |
| 2. Thomas Truxtun | 4. William Bainbridge |

55. The Bureau of Aeronautics was authorized in:

- | | |
|---------|---------|
| 1. 1917 | 3. 1921 |
| 2. 1919 | 4. 1923 |

56. Associate the below ships with the proper commanding officer:

- | | |
|-----------------------------|--------------------|
| 1. <i>uss United States</i> | 1. Nicholas Biddle |
| 2. <i>uss Randolph</i> | 2. Stephen Decatur |
| 3. <i>uss Constellation</i> | 3. Jacob Jones |
| 4. <i>uss Wasp</i> | 4. Thomas Truxtun |



57. The first American warship utilizing a screw propeller was:

- | | |
|---------------------------|-------------------------|
| 1. <i>uss Fulton</i> | 3. <i>uss Monitor</i> |
| 2. <i>uss Susquehanna</i> | 4. <i>uss Princeton</i> |

58. Killed when his plane was shot down in the Solomons in 1943 was Japanese admiral:

- | | |
|--------------------|------------------|
| 1. <i>Yamamoto</i> | 3. <i>Ozawa</i> |
| 2. <i>Koga</i> | 4. <i>Toyoda</i> |

59. Ramméd and sunk by *City of Rome* in 1925 was the submarine:

- | | |
|----------------|----------------|
| 1. <i>S-51</i> | 3. <i>S-4</i> |
| 2. <i>S-36</i> | 4. <i>S-16</i> |

60. Signing the formal surrender of the Japanese Imperial Government on board the *uss Missouri* as representative for the United States was:

- | | |
|-----------------------------|--------------------------|
| 1. <i>Douglas MacArthur</i> | 3. <i>William Halsey</i> |
| 2. <i>Chester Nimitz</i> | |

61. Associate the below ships with the proper commanding officer:

- | | |
|-------------------------|-----------------------------|
| 1. <i>uss Merrimac</i> | 1. <i>Robley Evans</i> |
| 2. <i>uss Yorktown</i> | 2. <i>Richard P. Hobson</i> |
| 3. <i>uss Jeannette</i> | 3. <i>George W. DeLong</i> |

62. In command of naval operations in the Gulf of Mexico during the War with Mexico was:

- | | |
|---------------------------|---------------------------|
| 1. <i>David D. Porter</i> | 3. <i>John A. Winslow</i> |
| 2. <i>Raphael Semmes</i> | 4. <i>Mathew C. Perry</i> |

63. Associate the below named craft and their inventors.

- | | |
|--------------------|--------------------|
| 1. <i>Turtle</i> | 1. <i>Holland</i> |
| 2. <i>Plunger</i> | 2. <i>Fulton</i> |
| 3. <i>Nautilus</i> | 3. <i>Bushnell</i> |

64. In command of the White Fleet when it started on its world cruise was:

- | | |
|------------------------------|------------------------|
| 1. <i>John Rogers</i> | 4. <i>Louis Kempff</i> |
| 2. <i>John A. Winslow</i> | 5. <i>Robley Evans</i> |
| 3. <i>Royal R. Ingersoll</i> | |

65. Name changed to "San Marcos" and used as a target in 1911 was the:

- | | |
|---------------------|--------------------------|
| 1. <i>uss Utah</i> | 3. <i>uss New Mexico</i> |
| 2. <i>uss Texas</i> | 4. <i>uss Louisiana</i> |

66. Torpedoed in WW I by the U-53, whose German commanding officer then sent an SOS call for the survivors, was the:

- | | |
|-------------------------|---------------------------|
| 1. <i>uss Wadsworth</i> | 3. <i>uss Christobel</i> |
| 2. <i>uss O'Brien</i> | 4. <i>uss Jacob Jones</i> |

67. Commanding Officer of *Reprisal* when she transported Benjamin Franklin to France was:

- | | |
|--------------------------|---------------------------|
| 1. <i>John Barry</i> | 3. <i>Nicholas Biddle</i> |
| 2. <i>Lambert Wickes</i> | 4. <i>Abraham Whipple</i> |

68. Appointed as the first Secretary of the Navy was:

- | | |
|-----------------------------|-------------------------|
| 1. <i>Benjamin Stoddert</i> | 3. <i>Gideon Welles</i> |
| 2. <i>Robert Smith</i> | 4. <i>Paul Hamilton</i> |

69. The U-58 was sunk and its crew captured during WW I by the destroyers:

- | | |
|----------------|-----------------------|
| 1. <i>Case</i> | 2. <i>Connyingham</i> |
|----------------|-----------------------|

- | |
|-------------------|
| 3. <i>Somers</i> |
| 4. <i>Fanning</i> |
| 5. <i>Ludlow</i> |

- | |
|---------------------|
| 6. <i>Nicholson</i> |
| 7. <i>Kearney</i> |

70. Associate the below SecNavs with the right hand columns.

- | | |
|-------------------|---|
| 1. <i>Wilbur</i> | 1. <i>An ex-Marine</i> |
| 2. <i>Long</i> | 2. <i>SecNav during Spanish-American War</i> |
| 3. <i>Denby</i> | 3. <i>Chief of Naval Operations established during his term</i> |
| 4. <i>Daniels</i> | 4. <i>Only Naval Academy graduate to become SecNav</i> |

71. Present during the Samoan hurricane of 1889, one of the three ships survived. It was:

- | | |
|------------------------|-----------------------|
| 1. <i>uss Vandalia</i> | 3. <i>uss Trenton</i> |
| 2. <i>uss Nipsic</i> | |

72. First naval officer who became an aviator:

- | | |
|---------------------------|-------------------------------|
| 1. <i>George C. Sweet</i> | 3. <i>Nathaniel H. Wright</i> |
| 2. <i>William McEntee</i> | 4. <i>Theodore G. Ellyson</i> |

73. Cut in two in a collision with *Aquatania* during WW I was:

- | | |
|--------------------|----------------------|
| 1. <i>Casson</i> | 3. <i>Warrington</i> |
| 2. <i>Chauncey</i> | 4. <i>Shaw</i> |

74. American High Commissioner to Turkey from 1919 to 1927 was:

- | |
|----------------------------------|
| 1. <i>RADM Newton D. McCully</i> |
| 2. <i>RADM Phillip Andrews</i> |
| 3. <i>RADM Mark Bristol</i> |
| 4. <i>RADM A. P. Niblack</i> |

75. Connect the below Naval Conferences with the year in which held.

- | | |
|----------------------|----------------|
| 1. <i>Geneva</i> | 1. <i>1930</i> |
| 2. <i>Washington</i> | 2. <i>1927</i> |
| 3. <i>London</i> | 3. <i>1921</i> |

76. Which of the below did not serve as Chief of Naval Operations?

- | | |
|--------------------------|------------------------|
| 1. <i>W. S. Benson</i> | 3. <i>W. V. Pratt</i> |
| 2. <i>Henry A. Wiley</i> | 4. <i>C. F. Hughes</i> |

77. The first of the escort carriers was:

- | | |
|------------------------|-----------------------|
| 1. <i>Card</i> | 4. <i>Long Island</i> |
| 2. <i>Block Island</i> | 5. <i>Croatian</i> |
| 3. <i>Fanshaw Bay</i> | |

78. In command of the Western Naval Task Force of the Normandy landings was:

- | | |
|-------------------------|------------------------|
| 1. <i>J. L. Hall</i> | 4. <i>A. G. Kirk</i> |
| 2. <i>R. L. Conolly</i> | 5. <i>H. K. Hewitt</i> |
| 3. <i>R. K. Turner</i> | |

79. Joining with British and Italian naval forces in the bombardment of Durazzo in WW I was a U. S. naval force consisting of:

- | | |
|----------------------|-----------------------------|
| 1. <i>Cruisers</i> | 3. <i>Minelayers</i> |
| 2. <i>Destroyers</i> | 4. <i>Submarine Chasers</i> |

80. First Chief of the Bureau of Aeronautics was:

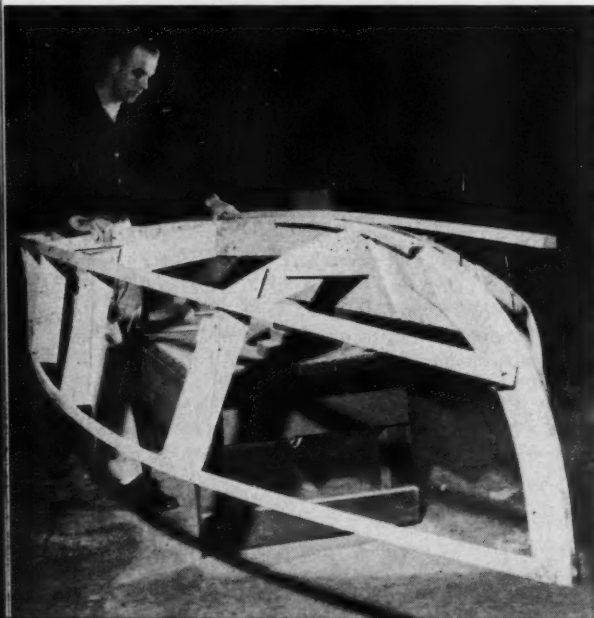
- | | |
|-------------------------|-----------------------------|
| 1. <i>W. A. Moffett</i> | 3. <i>J. J. Raby</i> |
| 2. <i>T. T. Craven</i> | 4. <i>H. V. Butler, Jr.</i> |



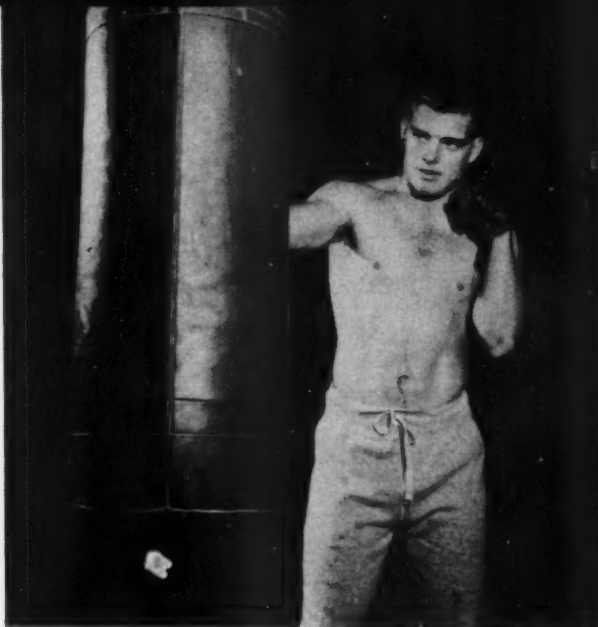
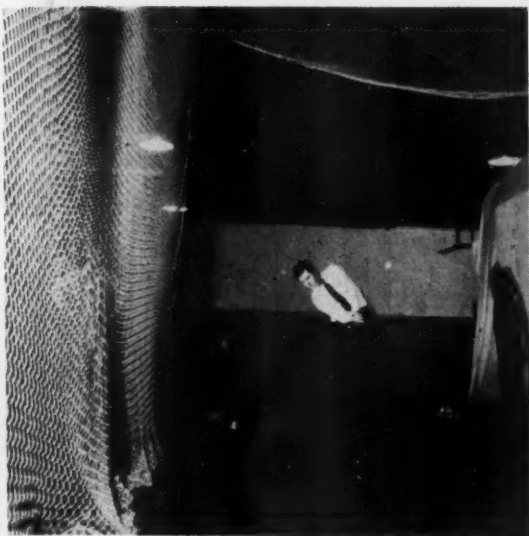
For Navy Craftsmen

TIME NEVER HANGS HEAVY on the Navymen at Newport, R.I., Naval Station. The station boasts one of the best equipped hobby shops serving the Fleet. Here Newport-based sailors have facilities including a fully equipped auto repair garage, wood-working shop, and electronic gear. Not only does the Newport hobby shop provide many pleasant hours for Navymen but also the enterprising hobbyist has the opportunity to save money the do-it-yourself way.

Top: D. G. Burtch, FT3 of *uss Kretchmer* (DER 329) works on small speaker unit. *Top left:* Wood shop's plane is used by J. O. Handler, YN3, to finish off board slated for home repair. *Left:* Do-it-yourself garage is put to good use. *Bottom left:* Construction of boat is checked over in hobby shop. *Bottom:* Auto shop supervisor M. V. Fisher, TMC, checks in tools.



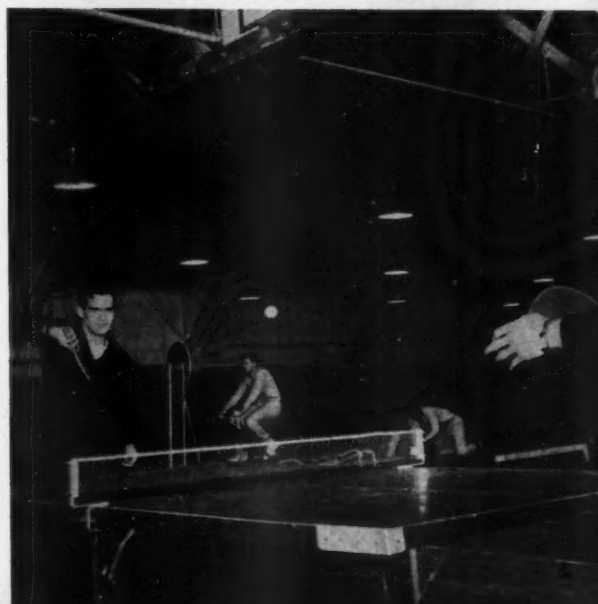
ALL HANDS



For Navy Sportsmen

FOUL WEATHER OR FAIR, the Navymen at Newport, R. I., Naval Station, have many recreation facilities available to them. Boxing, wrestling, gymnastics, weight lifting, table tennis, and even golf are just a few of the sports available inside Newport's large recreation center. If you just want to relax or maybe take your sports vicariously, the center has a TV lounge for just that. In short there is fun in all forms on deck to develop individual and/or team skills of Navymen.

Top left: Golf is practiced on indoor range. *Top right:* Sports center has boxing gear including punching bags. *Right:* For those who just want to relax the television lounge is a popular spot. *Bottom right:* Table tennis gear is put to use while others exercise and wrestle. *Bottom left:* Navymen enjoy an indoor game of badminton in the recreation center.



OCTOBER 1958

SERVICESCOPE

Brief news items about other branches of the armed services.

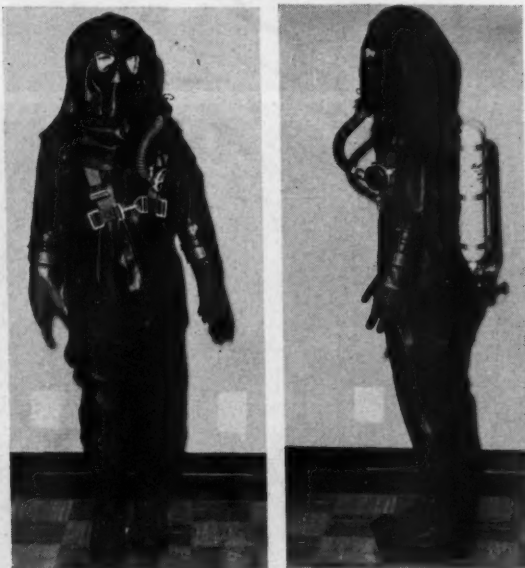


COOL FLIGHT — USAF B-47 Stratojets of Strategic Air Command line up for early take-off at Thule, Greenland.

THE NORTH AMERICAN AIR DEFENSE Command's combat operation center at Colorado Springs, Colo., is now linked with the underground control center of the Strategic Air Command Headquarters near Omaha, Neb., by a direct television circuit.

This set-up provides an immediate image of the tracking of unidentified aircraft approaching the North American continent. The senior controller at SAC's global command post monitors the 24-hour-a-day hook-up.

The TV circuit is also designed to eliminate verbal relaying of information and give the SAC Controller more timely and complete facts on which to base the vital decision of whether to alert the command's worldwide nuclear striking force.



IT'S A GASSER—New suit protects Army men servicing missiles that use highly corrosive chemicals as fuel.

STARLIGHT has been put to work in a new Army device to help troops see military objectives at night.

Known as the "Cascaded Photosensitive Image Intensifier," the new instrument gathers reflected starlight or diffused light from skyglow falling upon an object, then amplifies the diffused light to present a distinguished image. Because it requires no source of artificial light or radiation the new device differs considerably from night vision aids based on the principles of infrared, radar and such. It is much simpler than low-level light intensifier television systems.

To the unaided eye the intensity of light furnished by stars is so low as to be of little or no value in seeing at night. However, with the new instrument it will be possible to see at tremendously increased ranges objects which would otherwise be obscured by darkness.

Heart of the device is a "cascaded image" tube, which is actually two tubes working in a series and operating through an optical system to focus the light reflected from an object. The first tube acts as preamplifier for the second, which in turn further intensifies the light and presents the image on a viewing surface. The tube is powered by current at approximately 25,000 volts, furnished by a compact six-volt battery through a system of transformers and transistors.

The device was developed by private industry and the Army Engineer Research and Development Laboratories at Fort Belvoir, Va. In civilian applications it could prove useful to astronomers, X-ray photographers and scientists viewing the minute flashes of light emitted by nuclear particles.

★ ★ ★

A NEW HELMET, specifically designed for tank crewmen, has been developed by the Army.

Until now tank soldiers have worn either the standard M-1 steel helmet with liner or commercially produced football helmets, neither of which have fully met their requirements. The new headgear, officially designated the Combat Vehicle Crewman's (CVC) Helmet, is constructed of layers of laminated nylon fabric, and has a built-in communications system. Its ballistic protection is at least equal to that of a steel helmet. It is also designed to cushion the head against the shocks and bumps tank men are likely to experience in their cramped quarters.

The nylon fabric in the helmet is similar to that in the armor vests introduced during the Korean fighting. Including communications equipment, which is mounted outside the headgear, the new helmet weighs about three pounds. Its low center of gravity and internal web suspension system make for a secure and comfortable fit.

The communications gear includes a microphone on an adjustable boom, a switch box with a three-position switch for listening or talking by radio or through the tank's intercom system, and a plug-in cable that can be disconnected quickly and easily for emergency evacuation of the vehicle. Inside the helmet, snug-fitting earphones reduce outside noise and help guard the ears against injury.

The Quartermaster Corps, Ordnance Corps and Army Medical Service all took part in the development of the new headgear. The communications equipment was worked out by the Signal Corps.

A TILT-WING ARMY research aircraft, Model 76, capable of vertical take-offs and landings, has successfully undergone its first transition flight. It is being developed for the Army under an Office of Naval Research contract.

The initial flight consisted of taking off in a hover, flying through transition to forward flight for 7500 feet, and then returning to hover for a landing.

This is the first tilt-wing aircraft to complete successfully the full transition cycle in free flight. Model 76 is part of a research program to develop a flying machine combining the high forward speed of the airplane with the vertical flight capabilities of the helicopter. The wing and rotor-propellers are tilted vertically to take off, and horizontally for forward flight.

The successful flight is a direct result of several years study by ONR into vertical take-offs and landings.



AN ANTENNA capable of maintaining communications with space vehicles has been authorized for Army construction by the Advanced Research Projects Agency of the Department of Defense. This represents an initial step in the development of the ground equipment associated with the lunar probe program.

The 85-foot antenna, similar to radio telescopes used to find and track radio stars, will be built by the Army's Jet Propulsion Laboratory, Pasadena, Calif., and is expected to be in operation by the end of this year.

Camp Irwin, Calif., has been selected as the site for the antenna because it offered extremely low background-noise levels. Man-made interference such as automobile ignition systems, aircraft radios, power lines and commercial radio and television transmission must be kept to a minimum.

Scientists at JPL are using the lessons learned from the launchings of the Army *Explorer* satellites in order to provide the base for communication systems that will serve space exploration programs.

Dr. Eberhardt Rechtin, chief of guidance research at JPL, said the space communications program can be regarded as an evolutionary development.

"Long-range space communication will begin as a one-way link from space to earth in 1958," he said. "The experience gained in tracking and communicating with lunar vehicles at ranges up to 2500 miles will be utilized in solving the next problem—tracking and communicating at ranges up to 250,000 miles."



AN ALL-WEATHER surveillance drone system, based upon the SD-2 drone, which will provide combat unit commanders with information regarding the battle area, is under design by the Army.

Models of the SD-2 were scheduled for delivery this summer, for flight and other evaluation tests at Fort Huachuca, Ariz.

The drone features plastic-laminated construction of the wing, fuselage and tail components, designed for easy individual replacement as a package or repair by field maintenance personnel of the combat units.

The drone system, which includes SD-2 drones, check-out consoles, launchers, ground control system, and related equipment, can be transported in two standard Army 6x6 trucks with attached trailers.

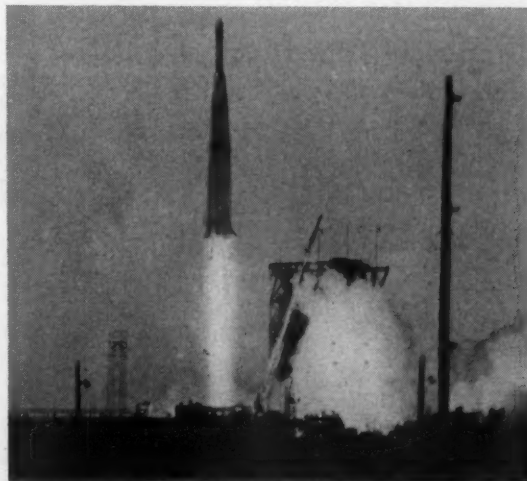


USAF MISSILE MIGHT—Trio of Air Force missiles lines up for review. (left to right) Thor, Snark and Jupiter.

THE ARMY has an experimental electronic earphone which is considered a major breakthrough in reducing noise. The earphone is designed to create artificial quiet by shutting out loud noises that interfere with combat communications.

Strange as it may seem, this artificial quiet was brought about by adding *more* noise with a miniature microphone in the special earpiece to create a second noise—just as loud, but opposite in phase. When the two sound waves meet in the earcup, they use up almost all their energy fighting each other—which reduces the noise level. This results in muffling a loud roar to a whisper.

The earpieces work in conjunction with a special electronic inverter and amplifier unit that in large scale production could be made small enough to fit into a soldier's pocket. The electronic system cuts low-pitched sounds down to as little as one-tenth their original volume. Higher sounds are trapped by foam cushioning.



MOUSE ROCKET — Thor-Able III, Air Force rocket with mouse in its nose cone blasts off at Cape Canaveral, Fla.



SEA TV — S. C. MacDonald, ET3, readies for the kinescope show. Rt: D. Krupka, AN, is the program director.

Saratoga Crew Enjoys Live TV Out on the High Seas

Thanks to WCVA-60 TV, the 4000 officers and men in *uss Saratoga* (CVA 60) are enjoying live television while deployed at sea.

Talent shows, smokers, shipboard ceremonies, church services and flight operations are among the many types of live programs telecast daily by the 60,000-ton super carrier's own Channel Six.

For non-live programs, the station operates in conjunction with the Armed Forces Radio-TV Service and presents a regularly scheduled series of films featuring kinescope recordings of many of the nation's top television shows and motion pictures.

Saratoga—at present—claims to be the only naval ship afloat with a TV station of this size and caliber

that is operated entirely by and for its crew. From a technical standpoint, it resembles the structure of a large commercial station.

In operation for only a short time, WCVA-60 TV is already in the process of expanding into a network. Electronic technicians aboard *Saratoga* are now building a larger and more powerful transmitter so they can telecast to other ships operating within a 15-mile radius. At present a low-level radio frequency transmitter puts out the station's TV signal to more than 25 receiving sets located throughout the ship. There are TV sets in the mess halls, lounges, wardrooms and workshops. In addition, you'll find a few private TV sets at remote compartments

scattered throughout the aircraft carrier.

Credit for WCVA-60 TV goes to the officers and enlisted men who have spent their off-duty hours in the installation, maintenance and manning of the station. The station's organizer and manager is CDR Warren L. Wolf, CHC, USN. He's assisted by Richard Krupka, AN, USNR, who is instrumental in carrying out the programming and presentation of various programs to the crew; ENS R. H. Norman, USN, and Ed Ward, ET1, USN, technical directors who saw to the installation of the equipment and are responsible for its upkeep; Roy McKee, ET3, USN, the station's newscaster, who collects and relays news to the crew.

TV CAMERAMAN E. WARD, ET3, mans camera, R. McKee, ET3, announces and D. E. Van Calligan, SN, sets controls.



LETTERS TO THE EDITOR

Story of a Ship

SIR: May we of the U. S. Naval Reserve Training Center, Hazelton, Pa., express our sincere congratulations on, "CA 132—The Story of a Ship," in your July 1958 issue.

We of the Training Center and Naval Reserve Surface Division 4-17L feel you and *uss Macon* rate a "first" in presenting such an accurate account of action on so highly a trained unit of the Fleet. —LCDR P. M. Adamson, Jr., Commanding Officer.

• *Thanks for those kind words.*—Ed.

SIR: Your July feature on *uss Macon* was a welcome sight to this plankowner. While it is true it has never fired a shot in anger, all of us aboard in her early days were proud of her performance.

I served aboard as a fire controlman, and was billeted adjacent to its fine Marine complement. Perhaps that has something to do with my present title.

Next to being a Marine, I'll always take pride in the fact that I was an original crew member of CA 132. My best wishes to the crew of *Macon*. —Capt. D. N. McKeon, USMC.

• *Thanks again. We're sure that your former shipmates will be glad to hear from you, Captain, and will appreciate the fact that, being a Marine, you regard your current outfit as the most. As you may recall, some Navymen at times have had that same illusi . . . oops . . . idea.*

As we've said before, without good story material there can be no story. All our staff writers assigned to Macon did their best to get across the atmosphere and spirit of the ship but it was impossible, of course, to be completely successful. It was one of our more pleasant assignments but we all have a feeling that we could have done better.

Any shortcomings that may appear in the story are due to our own limitations because the entire crew of Macon certainly did everything possible to help and cooperate with us. Macon deserves the best.—Ed.

More on CO's Order Book

SIR: Your reply in the August issue to a PN2 who asked about the "CO Order Book" is a bit off base. Incidentally, I was surprised to learn that a man whose rating requires such knowledge was uninformed in this matter.

A commanding officer's order number is placed on pay record adjustment orders for such things as crediting of leave rations, longevity increases, advancements in rating, etc. The numbering is carried on in sequence throughout a fiscal year, commencing with the number 1-58 in the case of fiscal year

This section is open to unofficial communications from within the naval service on matters of general interest. However, it is not intended to conflict in any way with Navy Regulations regarding the forwarding of official mail through channels, nor is it to substitute for the policy of obtaining information from local commands in all possible instances. Do not send postage or return envelopes. Sign full name and address. Address letter to Editor, ALL HANDS, Room 1809, Bureau of Naval Personnel, Navy Dept., Washington 25, D. C.

1958. These numbers are logged in what has long been known as the "CO Order Book." It is usually maintained in the personnel or ship's office.

Chapter 13 in the PN3 Training Manual and Article B-2317, para 11, in the *BuPers Manual*, should be of interest to you and your PN2 friend.—P. R. Heise, LT, USN.

• *Just goes to show that you can learn something new every day. Although in the "BuPers Manual" it doesn't*

Monkey Business

SIR: When I was at Okinawa in *uss Firedrake* (AE 14) there was an LST alongside us which had a pet monkey on board. He had his own battle station and, whenever GQ sounded, would run like mad to his post, don a specially-made battle helmet and sit on the edge of a gun tub, chattering away throughout the action.

I would like to find out what ever became of him.

Do you think any of your readers might know?—G. E. S., ex-USN.

• *We can't guarantee that anything will come of it, but we'll be glad to pass your query along to the Fleet.*

As smart as this monkey was, perhaps we may even get a personal reply from him—if he's still in the Navy, and if he's one of the nine other readers to whom ALL HANDS gets passed along.—Ed.



direct that such a book be kept, item 11 under Art. B-2317 dealing with page 7 says: "The spaces provided at the bottom of the page shall be filled in to show . . . the Commanding Officer's order number . . ."

Since a number is required by the "BuPers Manual," it seems reasonable to assume that some record should be kept of them. Why not in a CO Order Book?

In the PN3 Training Manual—required reading for all seamen before taking the test for PN3—it says in Chapter 13, page 223: "Pages that deal with the man's pay or with other matters involving money are usually combined Bureau of Naval Personnel and Bureau of Supplies and Accounts forms. The original and copies of these forms are numbered NavPers 601 along with a NavSandA number. They serve as the commanding officer's order to the disbursing officer to make some change in financial matters relating to the man. Each must carry a commanding officer's order number which means that in the commanding officer's order book an entry has been made of this order bearing the number indicated."

Just to check to see if the CO's Order Book was unheard of and unused by personnel men, we asked the first PN we ran into, in the personnel office nearby. He told us all about the order book and pointed out the article in the "BuPers Manual."—Ed.

Leatherneck Likes Ingram

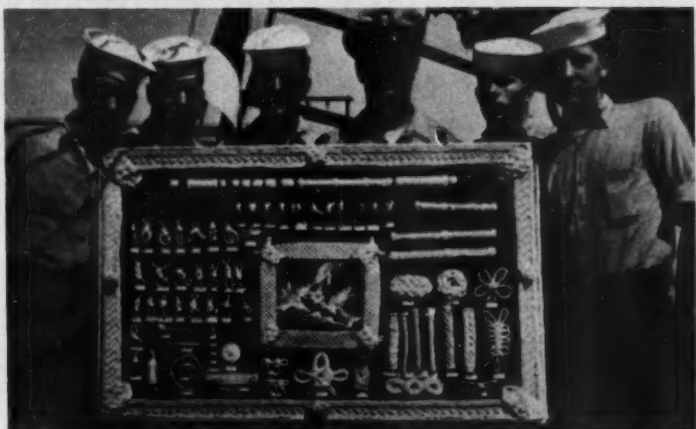
SIR: It was with pleasure that I had the opportunity of visiting *uss Jonas Ingram* (DD 938) while on leave recently.

A few of the personnel asked me how I liked the ship. I was happy to tell them, and would like to tell you.

After having viewed the quarters, the mess and the rest of the ship I can honestly say—this is the best Navy ship I have ever seen. I have been aboard some while stationed at Camp Lejeune, and have also toured others.

Since I'm a Marine, I'm not qualified to say whether destroyer duty is good or not, but I do believe I wouldn't mind duty aboard *Ingram* if I were a sailor. I take off my hat to *Ingram*, which must be doing a good job, as shown by the appearance of the ship, and so far as I am concerned, is the pride of the destroyer Fleet.—W. L. H., CPL, USMC.

• *Thank you. We've more or less felt that way about Ingram ourselves, but it's nice to have our opinions confirmed. As we always say, you never know who's watching you, and when. By the way, just out of curiosity, when does your enlistment expire?*—Ed.



ALL TIED UP — Deck force of USS YFR 1152 proudly displays its skill.

Give a Man Enough Rope, and See What Happens?

SIR: In the past we of the deck force of USS YFR 1152 have seen several photos of knot boards in ALL HANDS. So, we'd appreciate a chance to display ours in your magazine.

The 29-by-45-inch board is made of three-quarter-inch plywood with a mahogany stain. Its inner borders are French sennet and its outer borders are eight-strand square sennet with prolong mats for corners.

There are 43 different knots on the board. The dowel jackstays feature designs of coxcombing and cross pointing. The top jackstay has a series of Turk's heads of from three to eight strands. On the lower left-hand side of the display are: a fender; Jacob's ladder; monkey fist; long, short and eye splices; and line faked and coiled down. On the lower right side there are various types of sennet and different sizes of square sennet.

The center picture, an oil painting by John J. Donnelly, BMC, USN, shows a whale being harpooned. The

frame of the picture is made up of square knots and the corners of the frame are formed by carrick bends.

The men behind the board are (left to right): L. P. Versaci, SN; W. N. Ternest, SK3; W. R. Fahsbender, SN; J. J. Donnelly, BMC; S. E. Lawson, SN; and K. J. Fedio, SN.

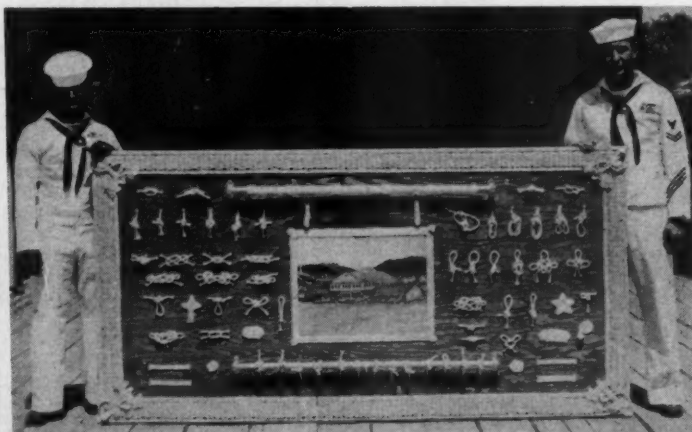
We think this goes to show that knot boards aren't the lost art that some people think.—BMC, USN.

SIR: Here is a picture of a knot board made by personnel at the Naval Station Boat Shed, Guantanamo Bay, Cuba. The board is four feet high and eight feet long. After it was finished it was enclosed in mahogany and plate glass and presented to the Cuban Navy for its new Caimanera Naval Post in Caimanera, Cuba.

Just thought you might be interested.—W. J. W., BM1, USN.

• Thanks. We're always glad to get letters that can be answered in just a couple of words.

In this case, "Nice work."—ED.



KNOTTY PROBLEM—This knot board was made at NS, Guantanamo Bay.

Delta, Alpha Rho

SIR: Having served aboard USS Delta (AR 9) during World War II, I would like to see a history of her in ALL HANDS. Is she still in commission?—R. O. P., ex-USN.

• Here's a brief account of Delta's history in the Navy.

Originally designed for commercial use on the "pineapple run" between San Francisco and Honolulu, Delta was built as SS Hawaiian Packer. Before completion she was acquired by the Navy. She was commissioned in June 1941 as a cargo ship (AK 29) and, during her first year of service, made runs to Cuba, Puerto Rico, Bermuda, Iceland, Newfoundland and Nova Scotia.

On 1 Jul 1942 she was placed in a Reserve status for conversion to a Fleet repair ship at Philadelphia, Pa. In her new capacity she sailed on 3 Mar 1943 to join a convoy headed for North Africa.

The convoy reached Mers-El-Kebir, Oran, on 19 March and Delta moored alongside the mole where she immediately set to work repairing amphibious craft. During a short three months there she put in a total of 110,800 man-hours working on 467 ships.

With the opening of the Sicilian and Italian campaigns, Delta moved to Bizerte Lake, Tunisia, late in July 1943. The following month, despite a series of air attacks by the Luftwaffe, she worked on 248 ships and amphibious craft. The air raids reached their climax on the night of 6 September. One of the planes shot down on that occasion was definitely credited to Delta and another was recorded as a possible for her.

As the war moved on so did Delta. She set up shop at Palermo, Sicily, in March 1944 and at Pozzuoli, Italy, that July. At Pozzuoli her job was to get ships and landing craft ready for the invasion of Southern France. From there she went to Naples, Italy, in August to repair the damaged amphibious.

On the last day of September 1944 the hard-working AR steamed for Bizerte, via Palermo, to repair landing craft being returned to the United States. She did that until November, when she was detached from the amphibious and returned to Mers-El-Kebir for duty as a destroyer repair ship for Commander Destroyer Squadron 16.

In April, 1945 Delta got back to the States—but not for long. After armament modifications and general repairs she left Norfolk, Va., on 15 Jun 1945, en route to Pearl Harbor, via the Panama Canal. She reached Pearl on 6 Jul 1945, worked there for a month, then steamed for Eniwetok, on 5 August.

The surrender of Japan was announced while Delta was at Eniwetok. She was ordered to rendezvous with Commander Task Group 30.8 off the islands of Japan, and on 28 August she entered the Sagami Sea with advance units. Two days later she moored off Yokosuka

Naval Base, where she was assigned to general Fleet repair work. One of the jobs she did there was to get the Japanese battleship Nagato in shape for the 1946 atomic bomb tests at Bikini. She also saw more China service in the year following the war's end.

In August 1946 Delta was placed out of commission, remaining in that status until the Korean conflict came along. She was put back into commission on 1 Nov 1950 at Philadelphia, Pa., and after her shakedown, left the East Coast in February 1951 for duty at San Diego, Calif., under Commander Service Force Pacific.

After working out of San Diego for more than a year, AR 9 headed overseas in June 1952 to set up shop at Yokosuka. There, she was part of Service Squadron Three, supporting the United Nations naval forces in the Far East, until September, when she was assigned to Task Force 77.

In February 1953 Delta returned to the West Coast. She operated out of San Diego and Long Beach, Calif., for the next seven months, then went back to the Far East. This time she saw service at Sasebo and Yokosuka, Japan, and at Subic Bay, Philippine Islands, before coming back to the States in July 1954 to work out of San Diego with Service Squadron One.

On Delta's next Far East tour—which began in January 1955—she spent part of her time as flagship of Commander Blockading and Escort Force Pacific Fleet. She returned to the West Coast that July, and the following month was ordered to the yard at Puget Sound, Wash., for deactivation. She was decommissioned on 1 Dec 1955 and is now part of the Bremerton Group, Pacific Reserve Fleet.

Incidentally, many of us remember the triangle marking on her ship's boats, denoting the fourth letter of the Greek alphabet—Delta.—Ed.

Ship Reunions

News of reunions of ships and organizations will be carried in this column from time to time. In planning a reunion, best results will be obtained by notifying the Editor, **ALL HANDS Magazine**, Room 1809, Bureau of Naval Personnel, Navy Department, Washington 25, D. C., four months in advance.

• **The Barnacles**—The sixth annual reunion of all officers who served in the Ninth Naval District before 9 Sep 1939 will be held at the Brodhead Armory, Detroit, Mich., on 1 November. For further information, write to CAPT Albert F. Block, USNR (Ret.), Ripley Building, Davenport, Iowa.

• **uss Leedstown (AP 73)**—A reunion will be held in New York City on 8 November. For more details, write to Frank A. Wiseman, 461 Am-

sterdam Ave., New York, N. Y.

• **uss Saratoga (CV 3)**—The seventh annual reunion will be held at the San Carlos Hotel, Monterey, Calif., on 11 October. For detailed information, write to Saratoga Reunion, USN PG School, P.O. Box 716, Monterey, Calif.

• **86th Seabees**—The ninth reunion will be held in New York City on 25 October. Further details may be obtained from Albert J. Sheehan, 289 McKinley Ave., Brooklyn, N. Y.

• **uss Smalley (DD 565)**—All former members who served on board from May 1953 to February 1954, and who are interested in holding a reunion with time and place to be decided, may write to Charles W. Randolph, 19-D Polk Ave., Clairton, Pa.

What About Those Rolled Sleeves?

SIR: This ship just put out an order that we had to keep our sleeves rolled down and our collars buttoned. Don't you think that's a chicken way to do things?—E. J. R., SN, USN.

• No, we don't. If you had asked some of the petty officers in your ship you would have found an answer. We can think of a few good reasons:

1) If your ship is in the tropics, the order was to protect you from mosquitoes, other biting insects, and even from the sun.

2) If you are undergoing training or in a "troubled" zone, the order was to see that the flash burn protection was carried out. It was found out in World War II that a lot of skin could be saved from a burn (as when there is a nearby explosion) if the skin were covered.

3) Rather than put you all in dress uniform for a VIP visit, perhaps your skipper figured you could all look "uni-

form" by this method, during the period of the visit or inspection.

You may or may not know, but a recent change that will soon be promulgated to "Uniform Regulations" will allow the commanding officer to prescribe skivvies and dungarees as uniform of the day at his discretion. But discretion wouldn't mean making mosquito bait out of you, for one thing. Does this answer your question?—Ed.

Detachment Date

SIR: When an officer receives orders directing that he be detached, say on or about 1 October, is it possible to add 10 days and make the detachment effective 11 October?—E. F. G., CDR, USN.

• Whenever orders are issued to an officer directing that he be detached on or about a given date, the commanding officer has a 20-day leeway to have the orders carried out. "BuPers Man-

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On the Lookout for Charlie Noble

Sir: I was in the U.S. Navy from 1918 to 1921. If my memory serves me right, in the "Old Navy" a Charlie Noble was a smoke stack above a forge operated by blacksmiths. I know there is a Charlie Noble aboard modern naval vessels, especially repair

started referring to the stack as "Charlie Noble," and the practice spread throughout the British merchant service. It later was taken up by the British and U. S. Navies and is still in use.

Further research reveals that in the



ships, but I want to be sure. Will you kindly check on Charlie Noble for me?—E. F. G., ex-USN.

• A British merchant service captain, Charles Noble, is said to be responsible for the origin, about 1850, of this nickname for the galley smokestack. It seems that Captain Noble, discovering that the stack of his ship's galley was made of copper, ordered that it be kept bright. The ship's crew

old days when coal was used for cooking, galley stacks used to become filled with soot. To clear them a gun was fired into the stack; bringing to light another term, "shooting Charley Noble."

In today's Navy, many a new recruit learns that Charlie Noble is still the galley smoke stack, but only after being sent on a wild goose chase by more seasoned sailors.—Ed.

ual," Art C-5315(b), states: "The commanding officer will have a discretionary period of 10 days on either side of the given date, during which period the officer concerned should be detached."

According to this, the effective detachment date could not only be held up until 11 October but could be effected on 21 September as well.—Ed.

Gets the Job Done Right

Sir: I wish to call your attention to a slight error in your July 1958 issue.

In the caption for a picture of USS Floyds Bay (AVP 40) you said her home port was San Diego, Calif. It's Whidbey Island, Wash.

Needless to say, we really appreciated seeing a picture of "our ship" in ALL HANDS. Although Floyds Bay is not the most modern, up-to-date ship in this Navy, she gets the job done and done right.

As Stationship in Hong Kong, B. C. C., from March to June 1958 (except for an 11-day period) this ship sup-

ported many units of the Pacific Fleet during their frequent calls at that port. Our crew spent seemingly endless hours delivering mail, transporting boarding parties and passengers to and from various ships, taking care of general correspondence, handling all incoming and outgoing mail for all ships, providing assistance to all visitors in that area.

I think we can say our efforts made Hong Kong "one of the best ports in the Pacific" to many a Navyman. You can see why we take pride in our ship.

We hope to see more of Floyds Bay in your magazine.—J. H., YN1, USN.

• Excuse us. Speaking of seeing more about Floyds Bay in ALL HANDS—you just did.—Ed.

Recommended for Reenlistment

Sir: As a recruiter I've run across quite a few cases in which someone has tried to reenlist and found out too late that there was no entry on his DD Form 214 (Armed Forces of the United States Report of Transfer or Discharge) to show he had been recommended for reenlistment.

Therefore, I would like to remind everyone being discharged to make sure an entry is made under Item 32 of the DD 214 to show whether or not the man is recommended for reenlistment. It may save a lot of time, and perhaps heartaches, when and if the man tries to reenlist.—R. L. F., SOI, USN.

• Unless there's been a slip-up somewhere along the line there's probably been a good reason for the absence of an entry regarding reenlistment in the cases to which you refer.

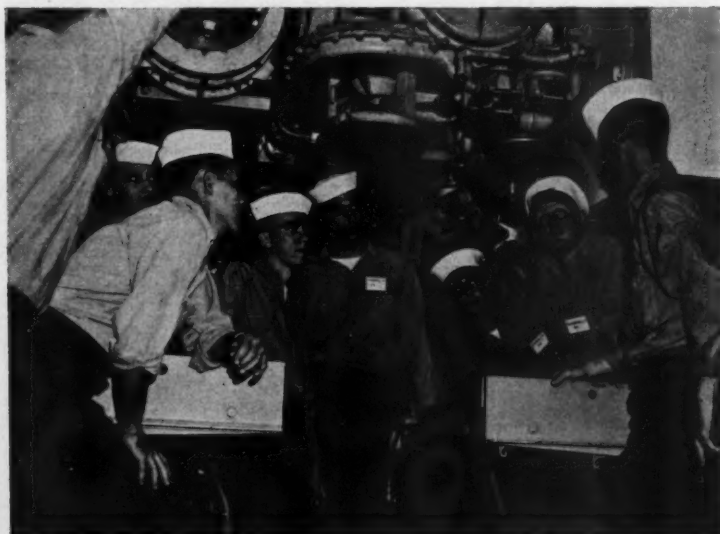
According to Section 6e(46)(f) of BuPers Inst. 1900.2A (Change 1, 12 Apr 1957), "No entry will be made in the case of personnel who are not recommended for reenlistment. The absence of the entry will be regarded as evidence that the individual was not recommended for reenlistment."

If the individual is recommended for reenlistment the words, "RECOMMENDED FOR REENLISTMENT," should be entered in capital letters under Item 32 of the form.

As you probably know, this form is designed to provide the individual being released, transferred or discharged with documentary evidence of active military service, and to furnish a vital record for interested government agencies which assist the veteran in obtaining his rights and benefits. Because the man might use the form to show a prospective employer what training and experience he received in the Navy, the adverse entry regarding reenlistment is deliberately left off.

However, in essence your reminder is still a good one. Everyone being discharged should make very sure the recommendation for reenlistment isn't being left off his separation papers through a mere oversight.

As you say, and we know of cases, it could cause heartaches later on.—Ed.



SEA SCHOOL—While one attack team stands steaming watches, the other team, divided into small groups, receives instructions from a crew member.



QUARTERMASTER logs sextant shooting of the sun. Rt: Bearing is taken with alidade. Below: Sextant is adjusted.

Navy's Big Wheels

WORKING TOPSIDE with the deck group are the white hats wearing the sleeve marking of a ship's wheel designating them as Quartermaster.

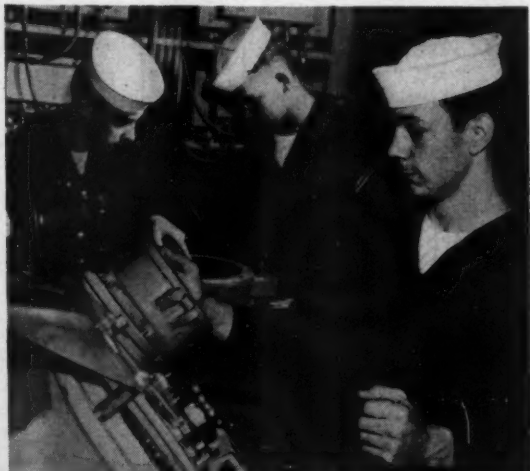
QMs are assigned to all types of Navy ships. On a large attack aircraft carrier such as *USS Franklin D. Roosevelt* (CVA 42) it takes as many as 20 of these salty sailors to handle their around-the-clock tasks.

Working on the bridge, in chart-house and wheelhouse they perform such duties as plotting charts, read-

ing and correcting the compass, computing sunrise and sunset as well as operating the ship's many complicated navigational instruments. One of the QMs' important jobs is to write the Quartermaster Log from which the Officer of the Deck writes the OOD Log, the ship's official record. Into this log he must record such things as sea and weather conditions, course and speed changes, casualties and drills, all formation changes—in fact almost *everything* that happens to or on his ship.



SECONDARY CONN—QM strikers learn duties in secondary conning station. Rt: QMs operate dead reckoning tracer.



INSIGNIA OF THE UNITED STATES

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WARRANT






























































pay
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NAVY
























































MARINES

ARMY

AIR FORCE

E-1	E-2	E-3	E-4	E-5	E-6	E-7	E-8	E-9	W-1	W-2	W-3	W-4
												
SEAMAN RECRUIT	SEAMAN APPRENTICE	SEAMAN	PETTY OFFICER THIRD CLASS	PETTY OFFICER SECOND CLASS	PETTY OFFICER FIRST CLASS	CHIEF PETTY OFFICER	SENIOR CHIEF PETTY OFFICER	MASTER CHIEF PETTY OFFICER				
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									W 1	W 2	W 3	W 4
												
PRIVATE	PRIVATE FIRST CLASS	LANCE CORPORAL	CORPORAL	SERGEANT	STAFF SERGEANT	GUNNERY SERGEANT	MSGT	SGT MAJOR	WARRANT OFFICER	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER
TEMPORARY GRADES during transition to new grade structure									W 1	W 2	W 3	W 4
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PRIVATE	PRIVATE	PRIVATE FIRST CLASS	CORPORAL	SERGEANT	STAFF SERGEANT	SERGEANT FIRST CLASS	MSGT	SERGEANT MAJOR	WARRANT OFFICER	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER	CHIEF WARRANT OFFICER
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									W 1	W 2	W 3	W 4

UNITED STATES ARMED FORCES

WARRANT			COMMISSIONED										
W-2	W-3	W-4	O-1	O-2	O-3	O-4	O-5	O-6	O-7	O-8			
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 CHIEF WARRANT OFFICER W 2	 CHIEF WARRANT OFFICER W 3	 CHIEF WARRANT OFFICER W 4	 SECOND LIEUTENANT	 FIRST LIEUTENANT	 CAPTAIN	 MAJOR	 LIEUTENANT COLONEL	 COLONEL	 BRIGADIER GENERAL	 MAJOR GENERAL	 LIEUTENANT GENERAL	 GENERAL	
 CHIEF WARRANT OFFICER W 2	 CHIEF WARRANT OFFICER W 3	 CHIEF WARRANT OFFICER W 4	 SECOND LIEUTENANT	 FIRST LIEUTENANT	 CAPTAIN	 MAJOR	 LIEUTENANT COLONEL	 COLONEL	 BRIGADIER GENERAL	 MAJOR GENERAL	 LIEUTENANT GENERAL	 GENERAL	 GENERAL OF THE ARMY
 CHIEF WARRANT OFFICER W 2	 CHIEF WARRANT OFFICER W 3	 CHIEF WARRANT OFFICER W 4	 SECOND LIEUTENANT	 LIEUTENANT	 CAPTAIN	 MAJOR	 LIEUTENANT COLONEL	 COLONEL	 BRIGADIER GENERAL	 MAJOR GENERAL	 LIEUTENANT GENERAL	 GENERAL	 GENERAL OF THE AIR FORCE

★★★★★ TODAY'S NAVY ★★★★★



ROUGH GOING — Heavy seas make refueling job tougher as Fleet oiler USS Waccamaw (AO 109) passes petrol to DD tender USS Cascade (AD 16).

New Drone Launcher

A newly developed system for launching drones, called the elastic cylinder-type drone launcher, has been demonstrated at the Philadelphia Naval Base.

The new system, which operates on a principle never before used in any type launcher, was developed by the Naval Air Engineering Facility at the Naval Base in Philadelphia.

Here's how it works: The carriage, to which the vehicle to be launched is attached, contains a roller which fits tightly against a flattened length of standard, six-inch diameter, heavy duty fire hose. To fire the drone,

compressed air is blasted into the fire hose, forcing the roller to move the carriage up the launching track.

By increasing the pressure into the hose during the run the carriage is accelerated sufficiently to keep the drone flying until its own engine can take over. The carriage automatically drops off the vehicle shortly after launching.

The simplicity, economy and light weight of this new launching system help to improve the present drone-launching methods.

The Navy drones are used for either land-based, shipboard or aircraft firing practice.

Subroc, Anti-Sub Missile

The Bureau of Ordnance has awarded a contract for research and development work in connection with a new antisubmarine missile system called *Subroc*. The contract covers the complete weapon system, including production and tooling methods.

The new weapon is an underwater guided missile which may be fired from above or below the surface. It can destroy enemy targets in an area of many square miles around the launching submarine.

The *Subroc* system can detect a submarine at long range, compute its course and speed, and fire the missile. The missile is propelled through the air by a rocket; the spent rocket drops away and the warhead continues on to the target.

Subroc is now under development at the Naval Ordnance Laboratory, White Oak, Silver Spring, Md.

Carries Its Own Flying Saucer

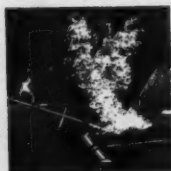
The Navy has an experimental "flying saucer" radar research airplane designed to bolster America's air defense perimeter by greatly improving the ability of sky sentinels to detect and warn of attack.

Called "the strangest shape in the sky," the new WV-2E aircraft resembles a *Super Constellation* airliner with a discus-shaped saucer riding piggy back. Within its saucer—a 37-foot-wide radome which rotates during flight—is a super-vision electronic "eye." The huge aircraft carries the most effective known airborne radar equipment to altitudes from where its detection devices can patrol vast distances—from the fringes of space all the way down to the earth's surface.

Important advantages of the saucer antenna and radar combination include sharp reduction of sea clutter interference (which sometimes partially clouds radar scopes like visual static seen on television screens), and its ability to report on objects in the skies from sea level to high altitudes without shifting the antenna upward or downward.

The new airborne early warning plane will undergo an intensive six-

YESTERDAY'S NAVY



On 3 Oct 1800 George Bancroft, historian and Secretary of the Navy, whose efforts led to the establishment of the U.S. Naval Academy, was born in Worcester, Mass. On 8 Oct 1943 a Naval Air Facility was set up at Dakar, French West Africa. On 15 Oct 1940 the Naval Air Station, Jacksonville, Fla., was established. On 21 Oct 1797 USS *Constitution* was launched at Boston, Mass. On the night of 27 Oct 1864 LT W. B. Cushing, in a steam-driven picket boat equipped with a spar torpedo, blew up the Confederate ram *Albatross* in the Roanoke River off Plymouth, N. C.

month flight and engineering evaluation program at the Naval Air Development Unit at NAS South Weymouth, Mass. Earlier models of the plane, distinguished by a hump on their backs and a bulge on their lower fuselage, are at present serving on the longest aerial police beats in the world as part of the North American Air Defense Command. They also fly Fleet sentry duty and serve as aerial combat command centers.

The WV-2E's interior looks as scientific as the control room of a space ship, with scopes, automatic plotters, navigational devices, computers and data processing equipment lining the fuselage. Because the airplane is designed for protracted operations, it carries its own galley, bunks and areas for off-duty relaxation for the crew of 22 manning the flying radar station.

The Naval Air Development Unit (NADU) where the WV-2E is undergoing tests is one of the Navy's most important test and evaluation activities. Commissioned in 1953, NADU is located in the huge blimp hangar at NAS South Weymouth.

This hangar houses all of the aircraft assigned to the development unit as well as shops and office spaces. Included in the impressive list of NADU aircraft are supersonic jet fighters, airships, and far ranging patrol planes.

Owing to the many and varied types of aircraft assigned, NADU's 250 officers and men must have diversified backgrounds. They operate and service aircraft and airships assigned by CNO for detection, tracking and interception functions in air defense systems and for utility flights in connection with the transportation of special equipment and personnel. They participate in experimental or prototype air defense and ASW systems which may be established to determine the effectiveness of the new systems.

NADU also provides services for Project Lincoln at the Massachusetts Institute of Technology which played a key role in developing the WV-2E's highly complex radar equipment designated APS 70 (APS stands for airborne radar search).

In an age where research and development mean the difference between victory and defeat, the Naval Air Development Unit has been assigned an important role in the defense of our country.

This Driver Deserved a Medal — And He Got It

Quick thinking and skillful driving has saved a man from possible death and has earned for Chief Molder Charles I. Rittel the Secretary of the Navy Commendation Ribbon with metal pendant.

Chief Rittel, currently serving with the San Francisco Group, Pacific Reserve Fleet, was driving on the Bayshore Freeway, San Francisco, when he saw a driver in the fast inside lane of traffic slump over the steering wheel of his car. Chief Rittel, seeing only one possible way to avert a serious accident, quickly maneuvered his own car across two lanes of traffic, dodged the runaway car as it scraped on and off the centerline guard rail, and skillfully slipped in front of it.

Expertly gauging his speed, he took the shock of the speeding automobile on his rear bumper and gradually brought both cars to a complete stop. His quick and heroic action saved the unconscious driver from probable serious injuries or possible death, and prevented what might have been a disastrous multi-car crash.



WHEEL GREAT — C. I. Rittel, MLC, receives SecNav Commendation Ribbon with Metal Pendant for performing outstanding driving feat.

Chief Rittel was presented the Secretary of the Navy Commendation by Captain William H. Sanders, Jr., his commanding officer. Chief Rittel had already been commended for his heroic action by the Commander Western Sea Frontier and the National Safety Council.

Wields Paint Brush With Ease

LT H. von Wontach, USN, the engineer officer aboard the attack transport *USS Henrico* (APA 45) has been seen doing a job usually reserved for the deck gang — painting the Number 3 stack.

The extra duty was okayed by his commanding officer, Captain G. L.

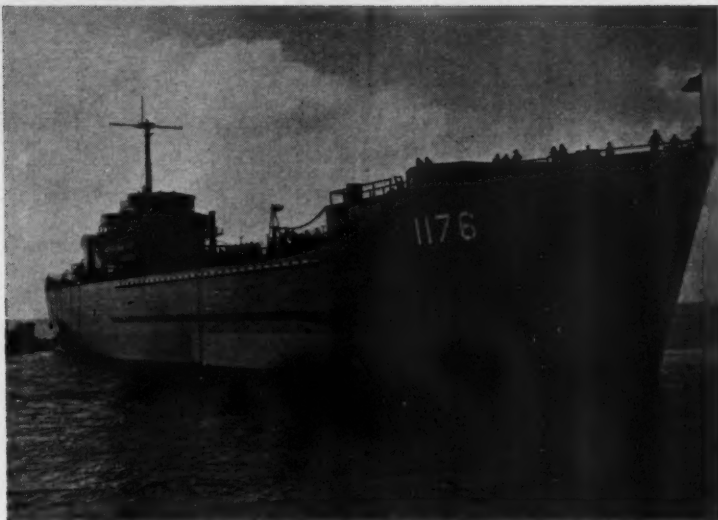
Christie, USN, however, since he was painting on another "E" won by the ship for engineering.

This PhibPac ship won the "E," plus the assault boat insignie, during an exercise held earlier this year.

Henrico, flagship of Amphibious Squadron One, has also won four Gunnery "E's."



WHAT SAY — R. D. Lalicker, SM3, USN, semaphores a message from signal bridge of his destroyer *USS Spangler* (DE 696) while cruising Pacific waters.



READY FOR WORK—uss *Graham County* (LST 1176) is one of six new class landing craft. She recently joined sister ships serving with the Atlantic Fleet.

Sweep Clear III

U. S. and Canadian naval units teamed up this summer for two weeks of mine warfare maneuvers.

Designated *Sweep Clear III*, this was the third operation of its kind to be held in the Western Atlantic Area. A similar exercise was held last year off the coast of South Carolina.

Sweep Clear III was designed to advance the state of training for NATO mine forces by laying, locating and countering a drill mine field.

RADM H. F. Pullen, OBE, CD, RCN, Commander of NATO's Canadian Atlantic Sub-Area, with headquarters in Halifax, N. S., directed the exercise. (In his Canadian national capacity, RADM Pullen is Canadian Maritime Commander, Atlantic.)

The Canadian Naval Forces that took part in *Sweep Clear III* included units of Canadian Mine Squadron One, the frigate HMCS *Outremont*, and an operational diving unit.

U. S. forces included minesweepers from Mine Division 42, the net-laying ship *uss Yazoo* (AN 92) and two explosive ordnance disposal teams.

Blip in Trouble

Just before midnight, during an operation at sea this summer, Task Group Alfa was engaged in antisubmarine warfare training operations off the Virginia Capes. Suddenly, a small target appeared on search radars. The escort destroyers *uss Beale* (DDE 471) and *Waller* (DDE 466) were immediately sent to investigate.

Instead of a submarine, the blip turned out to be *Blue Chips*, a 30-foot yacht with a crew of five, two days overdue from Bermuda to Baltimore. It had experienced engine difficulties because of contaminated gasoline and was without power, lights or radio facilities.

At dawn technicians and a fresh supply of gasoline from *Beale* were

put aboard the craft. Engine repairs were completed by 0900 and *Blue Chips* set course for Baltimore.

The assisting destroyer rejoined the Task Group which had been continuing its training exercises in the vicinity.

Refueling Record

When a series of feats puts your ship on top of the heap, you feel like the champion you are. But if there's a record involved, the feeling doesn't last long. Someone is sure to beat it. This leaves only one possibility—a rematch so you can gain back that title.

And that's just what happened to *uss Shangri La* (CVA 38)).

The carrier claimed a new Fleet refueling record which was set in April 1957 by taking on 7100 barrels of fuel per hour from *uss Kawishiwi*. The record held up for more than a year.

Then along came *uss Hancock* (CVA 19), also working with *Kawishiwi*, to establish a new high of 7488 barrels per hour on 25 May 1958.

The new record didn't last long. In fact, just two weeks.

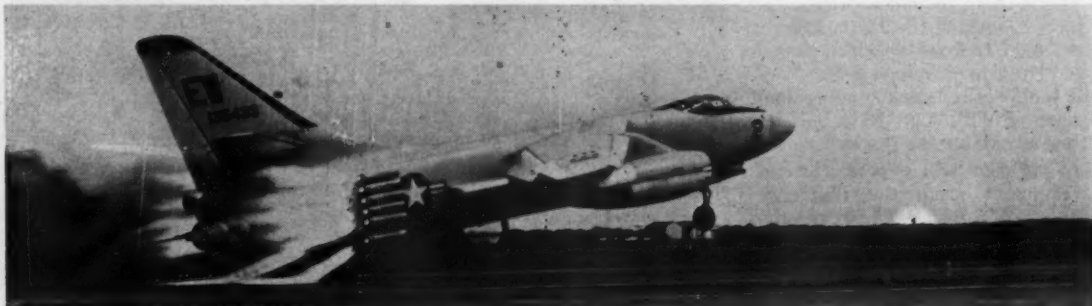
On 8 June, *Shangri La* claimed a new Fleet refueling record by taking aboard 7655 barrels per hour from *Kawishiwi*.

CVA 38 also claims the Fleet replenishment record while working with *uss Graffias* (AF 29) off Okinawa when the two ships transferred 117 tons of provisions in 31 minutes or, at the rate of 226.4 tons per hour. This broke *Shangri La's* old record of taking aboard 218 tons per hour from *uss Vega* (AF 59).

The crew maintains that their carrier's reputation sets her aside as the "Best in the West."

The ship is at present conducting a drive to collect \$10,000 for a new orphans' home in San Diego, Calif., *Shangri La's* home port.

JET UP AND GO — Navy A3D *Skywarrior* roars off the runway at NAS Jacksonville, Florida, in a fiery take-off.





Fleet Weather Central

THE FLEET WEATHER FACILITY at Yokosuka, Japan, is heading into its eighth year of operation.

Established in 1951, the facility is situated in a former Imperial Japanese Navy signal tower overlooking Tokyo Bay. According to the officer-in-charge, CDR E. W. Pate, USN, it is the only weather facility in the Navy with an unobstructed view in all directions. Its radar, which has an effective range of over 200 miles, is so specialized its operators claim it can pick up droplets of water in a cloud. It is also equipped with radio, devices for relaying weather maps by wirephoto and various other items of modern meteorological gear.

The unit furnishes information not only to the Navy, but also to the other American armed forces, the U. S. and Japanese weather bureaus and the Japanese Maritime Self-Defense Force. It is manned by U. S. Navymen, officers and enlisted men

of the Self-Defense Force, an American electrical engineer, and Japanese civilians. The civilians are responsible for sending technical data to the National Weather Records Center at Asheville, N. C. Over the past year their work has been so accurate that only four errors were found in the thousands of reports sent to the Center.

In addition to observing, recording and reporting weather information, the unit at Yokosuka handles the maintenance of its own weather equipment, that of facilities in Guam, Okinawa, the Philippines and the Tokyo area, plus the weather gear of carriers and other ships.

Through use of these modern technical advancements, weather reporting for this area is approaching a precise science. The facility's radar, for example, is able to track typhoons early enough to prevent serious loss of life.



ON THE AIR — B. E. Kennedy, RM3, receives map from the wire service. Below: Weather is plotted on chart.



ON GUARD — Repairs are made on weather gear by N. G. Sexton, ET1, Rt: Ships are warned of weather like this.



AN UNUSUAL COMBINATION—Navy seaman and his midshipman crew—won the International Star Boat Races held in Western Germany during the Kiel Week Regatta.

Joseph Duplin, SN, USN, of the Small Craft Facility at Annapolis, Md., was on TAD to *uss Manley* (DD 940) for the midshipmen's summer training cruise to European waters.

Sailing the *Star of the Sea*, Skipper Duplin, on an unfamiliar course, started four minutes late but went on to pass 22 boats to win.

After winning the laurels at Kiel, Duplin and his crew of one—Midshipman First Class Ronald W. Render, USN,—went on to West Berlin where they made a clean sweep of races held there on 4-5 July.

While Duplin and the *Star of the Sea* were winning international fame in the European circuit, crew members of the Fleet oiler *uss Caliente* (AO 53) were winning laurels in the Far East and are now boasting that they are "the best Dragon Boat racing team in the entire U. S. Navy."

While acting as station ship in Kaoh-siung, Taiwan, *Caliente*

the national event. *Caliente's* Dragon Boat team crossed the finish line a length-and-one-half in front of the favored team of Taiwan fishermen—and nearly three boat lengths ahead of the team from *uss Bausell* (DD 845).

★ ★ ★

In collegiate football, Navy should finish the season among the top ten as well as being the top team in the East again this year. With a 9-1-1 record for '57—including a Cotton Bowl victory—the midshipmen are expected to display great strength in defense. However, after losing seven starters, Navy lacks that all important element—game experience.

Although Navy always expects its biggest battle from Army, this year they should be watching the highly regarded Notre Dame—preseason favorite as the nation's top ranking team. If Navy can get by Terry Brennan's fighting Irish, they should SINK THE ARMY!

★ ★ ★

From all indications, football in the Norfolk area won't be



invited by local government officials to participate in one of their great national festivals—the annual "Great Dragon Boat Race."

The crew of the Fleet oiler accepted the challenge and formed a dragon boat team consisting of 24 men—22 rowers, one tiller-man, and the other as a stroke caller.

In the presence of some 10,000 people who lined the shores of the Love River for

the same this year. There'll be a Navy team, you can be assured of that, and it should be one of the finest grid teams to wear the Navy blue and gold colors in the Norfolk area in many years.

But it will have to go some to match the individual spirit that went along with such winning teams as the Amphibious Force "Gators" and other fighting teams in the Tidewater area.—H. G. B.

It's Not Cricket

Can the British play baseball? Ask the London (England) U.S. Navy *Bluejackets* and they will confirm that they can.

The *Bluejackets*, a baseball team made up of London area Navymen, won a hard fought game against the British Thames Board Mills team 6-5. The game was for the Reynolds Trophy, given annually to the winner of a game between the London Navy team and a selected British opponent at the Turroch Carnival in Grays, Essex, Eng.

In this year's game, watched by a sizable British audience, Tom Wesels, DT3, struck out 11 men for the Navy, while Dick Meek, HN, gave his full support by driving in the winning run with a long triple.

The *Bluejackets* are currently leading the 20-team Southern Baseball Association of Great Britain.

All-Navy Golf

The 1958 All-Navy Open Golf Championship was won by sheer determination, perseverance or the plain old "will to win." No matter what you call it, that's what ENS Rudy Boyd had.

After placing fourth in both the Sixth Naval District and South Atlantic Regional eliminations, he went on to take the number-one spot in the All-Navy finals at NAS Jacksonville.

A student-pilot at NABTC Pensacola, ENS Boyd carded a 295 (74, 71, 73, 77) in four rounds of play on the par 72, 7000-yard course.

Finishing just two strokes behind was the Atlantic Fleet Champ. Chief Yeoman Gene Witzel of ComMinLant, who tallied 72, 77, 75 and 73 for a 297 total.

Last year's All-Navy Open Champ, LCDR James Kinder of the School of Aviation Medicine at Pensacola; Richard Bury, YNSN, an ex-pro from PhibLant; and Murrell Schuler, AD2 from VR-8, Hickam AFB, Honolulu, all finished with identical scores of 300.

In the senior division, CWO Walter Axcell of NAS Barber's Point retained his crown by shooting a 313 for the 72 holes. Warrant Officer H. J. Doherty from *uss Bryce Canyon* (AD 36), and Anthony Grego of Green Cove, Fla., both tallied 318 for runner-up slots.



A Visit Next Door

WHEN MEN OF THE SEA gather together, and talk drifts to liberty ports, not all those mentioned will be far away places. Sailors of USS *Bennington* (CVA 20), among others, are sure to mention the good time had with our northern neighbors in Canada.

As *Bennington*, along with other Navy ships, dropped anchor in Esquimalt harbor the Navymen were enthusiastically greeted by citizens of Vancouver and Victoria. The Canadians welcomed them into their homes, gave them tours of the colorful cities and countryside and feted them with many parties.

Top: Carrierman buys souvenir in historic Hudson's Bay Company. *Top right:* Totem poles are photographed in Thunderbird Park. *Right:* U. S., Canadian and British Navymen chat with Vancouver girl during welcome rally. *Bottom right:* Members of Royal Canadian Mounted Police greet *Bennington* sailors. *Bottom:* British Columbia's Parliament building is viewed by visiting bluejackets of the U. S. Navy.



New Text Ready on Navigation and Piloting

A completely rewritten and up-to-date version of Dutton's *Navigation and Nautical Astronomy*—long a standard text for teaching the basic elements of marine navigation—is now available under the new title, *Dutton's Navigation and Piloting*.

Published by the U. S. Naval Institute, Annapolis, Md., the new 771-page text was prepared by CDR John C. Hill II, USN; LCDR Thomas F. Utegaard, USN; and Mr. Gerard Riordan of the Navy Hydrographic Office. The material in it has already been tested in the instruction of midshipmen at the Naval Academy over the past two years.

The original *Astronomy*, prepared in 1926 by CDR Benjamin Dutton, USN, for the instruction of midshipmen, has gone through 10 editions and numerous printings. As the standard authority in its field it is familiar to hundreds of thousands of students of the art and science of navigation.

The new text, tailored to the needs of the navigation student at the Academy today, should prove useful not only there, but also in other schools and in the NROTC navigation curriculum.

Most of the material in the text is either new or completely rewritten.

In the part of the book dealing with piloting, the treatment of current and aids to navigation has been expanded, new concepts have been added and there are new chapters on the piloting team in Navy ships and tactical characteristics in piloting. The other two parts, on celestial navigation and relative movement, have been rewritten to reflect the latest concepts for teaching this material.

Alaska and Hawaii. Further boosters will be required only when the individual is going to travel to some other area of the world.

Cholera and typhus boosters, which were automatically required in preparation for travel to certain parts of the world, will, in most cases, no longer be given. From now on, once a person has received his basic series of shots, this series will hardly ever be repeated. Even while the individual is residing in an area designated for cholera-typhus immu-

nization, booster shots are not needed unless there is an actual risk of infection.

There will also be several other changes under the new policy. For instance, polio shots will for the first time be mandatory for all personnel under age 40 before traveling outside the continental United States.

In addition, the new regulations will permit waivers of military immunization requirements for personnel traveling under armed forces auspices to overseas areas on short trips. These waivers will not be granted for international quarantine requirements, including those for reentry into the United States and its territories.

• **NAVY SCHOOLS**—Starting in January 1959, the first of 12 basic technical schools will close down. The ability of the forces afloat and other operating commands to train personnel in certain specialties makes the closings possible.

By closing the schools, resources in personnel and funds gained will be used to meet training requirements for new development weapons and other equipment, and for more advanced types of training.

The Class "A" schools to be closed are:

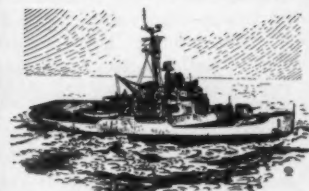
School and Location	Approximate Date
Gunner's Mates	January 1959
Naval Training Center Great Lakes, Illinois	
Personnel Men	January 1959
Naval Training Center Bainbridge, Maryland	
Personnel Men	January 1959
Naval Training Center San Diego, California	
Storekeepers	July 1959
Naval Schools Command Newport, Rhode Island	
Storekeepers	July 1959
Naval Training Center San Diego, California	
Commissarymen	January 1959
Naval Schools Command Newport, Rhode Island	
Commissarymen	January 1959
Naval Training Center San Diego, California	
Enginemens	January 1959
Service Schools, Naval Station, San Diego, California	
Boilermen	January 1959
Boilerman School, Naval Base Philadelphia, Pennsylvania	
Damage Controlmen	January 1959
Damage Control Training Center Philadelphia, Pennsylvania	
Damage Controlmen	January 1959
Naval Schools Command Treasure Island, California	
Drivers	February 1959
Naval Schools Construction CBC, Port Hueneme, California.	

HERE'S YOUR NAVY

Designed and built for operations in the polar seas, the icebreaker USS *Burton Island* (AGB 1) is only 270 feet long, yet she is 64 feet wide. This almost disproportionate width gives her a short, stubby appearance.

But she does the work of a Service Force ship, has the flight deck of an aircraft carrier, the draft of a battleship, the handling characteristics of a motor launch, the power of a sea-going tug, and roll of a destroyer.

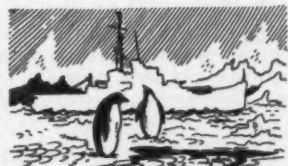
The ship displaces 6000 tons and draws slightly over 29 feet of water when fully loaded. She has a fuel capacity of over 700,000 gallons of diesel oil. Powered by a diesel-electric direct-drive propulsion plant, the



icebreaker has an endurance distance of approximately 26,000 miles at its most economical speed of 12.5 knots.

Since commissioning in December 1946, she has taken part in two Antarctic and 16 Arctic expeditions.

Burton Island can carry dry provisions for over 300 days of steaming, and frozen meats and foods for 200 days at sea. The ship is cork-insulated throughout and provides comfortable living conditions for its crew of 250 men in cold climates. Her six diesel engines are capable of producing 10,000 horsepower; 5000 to each of her twin screws.



The ship's bottom is round. Her bow, sheared off at an angle near the water line, permits the ship to ride up on top of the ice rather than ramming it. The weight of the bow of the ship crushes the ice, and the ship settles back into the water.

To reduce the possibility of the vessel's becoming frozen in the ice, *Burton Island* has a heeling system which is used to vary the displacement and roll the ship while working in the ice, helping to break it first on one side and then the other.

THE BULLETIN BOARD

Going to Midway? You'll Find Lots More Than Gooney Birds

MIDWAY, it seems, is most appropriately named. Not only is it just about in the middle of the North Pacific Ocean but it's also halfway around the world from Greenwich. It's not in the tropics nor is it a "South Sea Island."

Its climate is also somewhat middling. Not much of anything. But what there is, is wet. In one respect, however, the island is neither midway nor middling. It's one of the most important naval bases in the Pacific. A huge \$40-million construction project will be completed this year to support the Airborne Early Warning Wing in the Pacific.

This means that more and more Navy men and their wives are going to be eyeing this tiny dot in the middle of the Pacific and wondering what it's going to be like to live there. This is the way it is:

Climate—The climate on Midway Island is remarkably uniform throughout the year. It is possible however to break the climate down into two seasons—summer and winter; or shirt sleeves and sweaters. The summer, warm and fairly humid, prevails from July to October. This is the season for tee shirts and cotton dresses. By December the winter season has arrived and it remains until the following April. Although the temperature averages 66 degrees, the relative humidity remains fairly high, so one is comfortable with sweaters or light jackets.

The vegetation on Midway usually creates a very pleasant surprise for most new arrivals. Instead of finding a desolate island as it has been pictured, you will discover a luxuriant growth of trees, shrubs, flowers and grass. One of Midway's most outstanding features is its bird life. The Laysan Albatross, known as the "Gooney Bird" has become a symbol for the island. About the size of a goose, it has a snow white neck, breast and underside, with a gray shading around the eyes, a back and wings of brown and black, shining black eyes and a long curved yellow beak. Several other members of the bird family make their home here.



"As you were, son"

Duty Tour—Duty tours on Midway Island are 12 months if dependents are not on station, or 18 months if dependents are on station or 12 months after arrival of dependents, whichever is greater. Extensions are granted upon approval of commanding officer.

Inoculations—As soon as orders are received, immunization inoculations and chest Xray for entire family should be obtained. Overseas travel will not be authorized by the Commandant Twelfth Naval District until immunization is completed. Be sure you have necessary immunization records in your possession upon reporting for travel.

Travel—It is recommended that your wife have enough money for subsistence and travel to San Francisco, hotel accommodations while there, the subsistence bill aboard ship and for any lay-over in Honolulu. She will be told of travel accommodations when orders are issued. Financial plans should be made accordingly.

San Francisco to Honolulu—Upon reporting to the Commandant, 12th ND, San Francisco, you and your family, if concurrent dependent travel has been authorized, will be assigned space to Honolulu via either air or surface. If air travel is assigned, travel will be via MATS departing Travis Air Force Base, Calif. Waiting time may be from one

to 10 days; the average is four days. If surface space is assigned, date of departure is known upon assignment. Waiting time in San Francisco averages one week.

Honolulu to Midway Island—All travel is by MATS from Hickam Air Force Base. Normally, there is little waiting. If circumstances require a waiting period in Honolulu, adequate, but temporary transient quarters may be obtained at Hickam Field "T" Quarters, Fort DeRussey, Ali Wai Hotel Apartments, or Islander Apartments (cooking accommodations). Reservations should be made as early as possible by letter to the Commandant if leave is taken in Honolulu. The quarters listed above may be used only while in transit, or on leave, on a space available basis. Government housing is not available to transients. Private rentals are high and rarely available.

Arrival at Midway—The Air Terminal Duty Officer meets all planes and will provide necessary information as to temporary or permanent quarters assignment, transportation, location of the Officer of the Day's office for check-in, and other pertinent information.

Housing—Only government quarters are available. Quarters must be certified by the commanding officer as being available before dependents are given permission to enter the area. A waiting list is maintained at the present time except for key billet officers of the rank of commander and above. The precedence on the list is determined by the date personnel report on board. The normal waiting period for officers is four to five months; for CPOs six to eight months; and for others 10 to 12 months. Only personnel of pay grade E-5 and above are permitted family housing.

Household Effects—On Midway, your quarters will be completely furnished with tropical type furniture and mattresses. So you need ship nothing in the line of furniture, nor is it wise to do so since the climate is hard on furniture and there is no storage for undesired furniture. Most

wood, ferrous metals, leather and many fabrics are easy prey for mildew. However, mildew is not so bad as it is in Hawaii. You should bring furniture for small children, plus pillows and throw rugs.

For added comfort or for convenience, you will probably want pictures and bric-a-brac, and possibly one or two of your favorite lamps to supplement those issued. You will certainly need linens, kitchen utensils, china, glass, and tableware, electrical appliances, two blankets per bed, and children's toys.

Choice of kitchenware is up to the woman of any household, we agree, but she would be wise to keep in mind that aluminum or stainless steel utensils are much more satisfactory in the humid air on Midway than are other metals.

The linens you take should be sturdy, and while you will undoubtedly want to set a fancy table occasionally, you should go easy on taking fine linens. The climate and brackish water is too hard on them.

Silver, sterling silver and brass are harmed by the salt air, and if little used, are pitted easily.

You can use all your electrical appliances on Midway, since the power is the same as it is on the mainland.

Your washing machine is desirable and a good iron is a must. (Automatic washing machines deteriorate very rapidly, owing to the effect of brackish water, and there is no facility for repairs.) A clothes dryer is recommended. One wringer type washing machine is furnished for four families on a joint use basis. A refrigerator and deep freeze are furnished each set of quarters, both officer and enlisted.

A good record player with sufficient records, and radios, will provide relaxation. A piano is not recommended because the climate can easily ruin it.

Your express shipment should be used for immediate needs upon arrival. Send your express shipment to the Naval Supply Center, Oakland, Calif., for further shipment to Midway. It will be forwarded to Midway by ship departing Oakland and arriving Midway approximately every 15 days. For accurate information on authorized weight of shipment, consult your Supply Officer.

"Hospitality Kits," consisting of

essential pots, pans, dishes and bedding may be obtained until arrival of your household effects.

The Supply Department has a Household Goods Section, but complete services for uncrating, unpacking, packing and crating cannot be offered in the foreseeable future. All packing of dishes, glassware, bric-a-brac, lamps, kitchen utensils and small electrical appliances must be performed by you. However barrels and packing material are provided. The servicing of major appliances must also be done by the owners. You are requested and advised to keep your household goods at a minimum in order not to overtax the system.

Shipment time from most localities

in the U. S. is about 60 days from date of pickup.

Clothing—For the most part, your family will need only washable clothes and few winter clothes (in the winter months the temperature sometimes drops to the middle 50's). Bathing suits, shorts, halters, rompers, dungarees, and sweaters should be brought along. These are also usually available in the ship's store.

Pedal pushers and Bermuda shorts are desirable for bicycle riding, the main means of transportation. In general, dress is informal. Raincoats are a necessity and usually available in the ship's store. An important item, and not one to overlook, is shoes for the children. You should bring a good year's supply of clothes

HOW DID IT START

Naval Ordnance Laboratory

In 1918 the Bureau of Ordnance set up at the Navy Yard, Washington, D. C. (now the Naval Gun Factory), a small technical activity called the Mine Laboratory. Employing less than 50 engineers, its mission was to design improved types of sea mines and fuzes.

Since then the work of this group has expanded to include almost all types of advanced weapons design as well as many fields of basic and applied research. Today the activity is known as the Naval Ordnance Laboratory—one of the nation's most respected institutions for military research and development. Located in a modern \$50 million facility near Silver Spring, Md., NOL now employs more than 3000 people, including 1000 professional scientists and engineers.

During the four decades of its operation the Laboratory has made many contributions, not only to advanced weaponry, but also to fields of science and technology.

In World War II, sea mines developed by NOL helped strangle Japan's supply system. More recently, it made major contributions to the development of the Navy's leading surface-to-air weapons—Tartar, Terrier and Talos. The atomic depth charge Betty, which now gives the Fleet a truly effective defense against modern enemy submarines, was conceived and perfected by NOL in less than five years.

Now under development by NOL is the important new Subroc weapons system, by means of which a missile can be launched from a surfaced or submerged Navy submarine, travel long distances through the air, reenter the water and seek out an enemy sub. The laboratory also has an

important role in the current development of Polaris, one of the Navy's most significant weapon projects.

Some of NOL's other work, in basic and applied research, may have great significance to mankind. For instance, the Lab's advanced aeroballistics studies, which have already provided answers to some IRBM and ICBM problems, may help to bring closer the day of interplanetary space travel.

Improved metals, plastics and other useful substances, and new uses for these materials, are already coming from NOL's advanced chemistry studies. And the Lab's basic research in physics and mathematics may help to uncover secrets of the internal structure of the atom, which would open up whole new worlds to science.

Obviously, the Naval Ordnance Laboratory has come a long way from the little group that started out in 1918 to design better mines and fuzes.



and shoes for yourself and the children. For the most part, the boys wear slacks, denims, and sport or aloha shirts. The girls prefer skirts and blouses. Off duty—men seem to prefer aloha shirts, casual slacks; washable items are preferable. The officers' club rarely has formal occasions, in which case cocktail dresses or short formals by the women is optional.

Uniforms—Officers and chief petty officers should carry with them at least one set of blues (Bravo), whites and service dress khakis for inspection purposes; and raincoats. Aviation greens are not worn at Midway. Cotton khakis are worn most of the time, and tropical khaki shirts are authorized. During the warm months tropical shorts are authorized. The blue working jacket is optional.

Enlisted men will need whites, blues and dungarees. Tropical shorts are authorized. Off duty men may wear civilian clothes.

Services—Midway is serviced for air transportation and mail by MATS which at present operates two turnaround flights a week from Honolulu.

Complete laundry service is provided, except for dependents.

Dry cleaning facilities are available for all personnel, including dependents. Service is on a four-to-five-day schedule. Experienced personnel are not always available for dry cleaning.

The commissary store cannot offer as wide a selection as a large supermarket. However adequate supplies of food in reasonable varieties are available. Fresh fruits and vegetables are available in limited variety and supply.

The ship's store (Navy Exchange) carries the standard line of merchandise normally found in medium sized mainland Exchanges plus various imported as well as U. S. products at a substantial reduction from U. S. prices. Imports are duty free.

A beauty shop is available. Cos-

metics are limited in selection and supply.

Education—The new large George Cannon School provides instruction covering the entire curricula for both grade school and high school under qualified instructors. Subject matter for various class levels are based on the courses of study recommended by the Chief of Naval Personnel.

The station has a nursery school and kindergarten. Two-year olds are eligible for enrollment in the nursery school. Five-year olds may be enrolled in the kindergarten. The hours are from 0830 to 1130 five days a week. The station provides a special bus which takes the children to and from school. The enrollment fee is \$12.50 per month for one child. Additional children of the same family may be enrolled for \$6.25 per month. The nursery school children are provided with a light snack each morning.

Yes, But Can It Bark?

A scientist, working on an Office of Naval Research project, has successfully demonstrated a device which may some day enable an electronic machine to identify its surroundings, read hand-written or printed material, and even translate foreign languages without any human training or control.

Called "Perceptron," the device works on principles which are believed to parallel the ones involved when a human mind recognizes the points which make one thing similar to another. It was designed by Dr. Frank Rosenblatt, a research psychologist at the Cornell Aeronautical Laboratory of Buffalo, N. Y.

In its present stage of development Perceptron is only an embryo. The pilot model is about one year from completion. However, the basic features of Perceptron have already been simulated on a 704 electronic data processing machine.

In repeated experiments the simulated Perceptron has proved that it can not only "learn" what it has been shown by others, but can also "teach" itself to recognize something it has never seen before. For instance, on being shown cards marked on either the right or left

side, the system, on its own, starts to distinguish between right and left, and after 30 or 40 cards it registers some consistent response for the ones marked on the left and a different response for those marked on the right. Sometimes, the simulated Perceptron has a little trouble getting the idea, but on the average, it has made this distinction in 97 out of 100 experiments.

Although this sounds like pretty simple stuff to a human being, it is a great forward stride in the field of electronic information systems, according to Dr. Marshall C. Yovits, Head of ONR's Information Systems Branch. He points out that this is the first system which has been conceived that can organize information presented to it completely without the intervention of a human operator.

The concept behind Perceptron opens up future possibilities which until now have appeared only in the realm of science fiction. The ability to read print and script, and to respond to verbal commands, are within Perceptron's reach. Only a step beyond that lies the prospect of an automatic translator, which

can receive spoken inputs in one language and produce written or verbal outputs in another. Automatic landing systems, automatic pilots and recognition systems of almost every variety could conceivably make use of the Perceptron concept, and its application to library research and data gathering for scientific purposes already seems clearly indicated.

Perceptron differs from present-day "electronic brains" in that it doesn't need a stored inventory of images, previously fed into it by an operator, in order to recognize forms, shapes and such. Nor does it have to rely on a mathematical analysis of characteristics. Instead, it works on about the same principle as the one involved when a human being recognizes something he has seen.

The first Perceptron will have about 1000 electronic "association cells" receiving electrical impulses from an eye-like scanning device made up of 400 photo-cells.

This will be a far cry from the complexity of the human brain, which has 10 billion responsible cells and 100 million connections with the eyes.

Medical and Dental Facilities—

There is a station hospital which provides both inpatient and outpatient services for all dependents. The following facilities are available: An operating room, pharmacy, laboratory, delivery room, nursery, physiotherapy room, Xray machine, eye refraction equipment and wards.

Dental work for dependents is on a limited basis. It is recommended that required dental work be performed before arrival.

Religion—Present on the station are a Catholic and a Protestant chaplain. There is a new and beautiful combined chapel. Bible classes are conducted weekly.

Money—There are no banking facilities at Midway. Before your arrival on Midway, it would be wise to establish either a checking or savings account in the United States or Honolulu. Personal checks may be cashed for amount of purchase at the ship's store, and for reasonable amounts at the various clubs when funds are available, at the discretion of the managers.

Communications—No telegraph or cable offices are available on Midway. However, Class "E" messages may be sent.

In addition, Midway boasts a very fine amateur radio station which is available for contacting friends or relatives back in the States. Individual amateur radio operators are permitted to operate under regulation.

The station has a post office where money orders and parcel post facilities are available.

Recreation—Midway is one of the most beautiful islands in the Pacific Ocean and provides a healthful environment for both children and adults. The bathing beach is safe.

The station has a five-lane bowling alley, three baseball diamonds, one lighted handball court, tennis courts, roller-skating rink, gymnasium and a well equipped hobby shop. If you enjoy fishing, bring along your gear because the fishing is exceedingly fine. At the present time Midway has 23 outboards for fishing and water skiing. Skin diving is quite popular and Midway has an active skin diving club. It is suggested that you bring along swim fins and snorkel masks, if you enjoy this type of recreation. However this equipment can usually be found in the ship's store.



"Oh come now, Molesworth, we all know you're in there"

Movies are shown twice nightly. Matinees are shown on Saturdays, Sundays and holidays.

Local Transportation—There are no private automobile vehicles on Midway. Transportation is via bicycle or bus. Bicycles may be purchased locally, but bring your own if you have one, especially children's tricycles or bicycles.

Passports—Passports are not required for service personnel, dependents or Civil Service personnel for entry to Midway Island.

Leave—Military personnel, and military personnel accompanied by dependents, are granted one trip to Hawaii during their tour of duty at Midway, but not to the mainland. This leave is granted on a space available basis for transportation.

CPOs and POIs Selected for Warrant Officer Appointments

Three first class and 28 chief petty officers have been issued temporary appointments to Warrant Officer, W-1. See column at right.

These appointments are from an eligibility list established by a selection board convened 4 Feb 1958.

Regular Navy appointments were broken down into the following designators: Aviation Operations Technician, one; Boatswain, four; Aviation Ordnance Technician, one; Surface Ordnance Technician, three; Underwater Ordnance Technician, two; Machinist, one; Electrician, four; Aviation Electronics Technician, two; Electronics Technician, four; Supply Clerk, six; Medical Service Corps, two; and Civil Engineer Corps, one.

Regulations and Limits Set On Granting Emergency Leave

Persons deployed outside the U.S. may now find it more difficult to get emergency leave. Because of tight budgetary limitations on travel, specific guidelines have been laid down for commanding officers when granting emergency leave from outside the continental limits of the United States.

Normally, individual emergency leave will be granted under the following circumstances:

- Upon the death of a serviceman's wife or unmarried minor child.
- When the return of a serviceman will contribute to the welfare of a dying member of his immediate family.
- When, owing to the death or serious illness of a member of the immediate family, important responsibilities which cannot be accomplished from his duty station or by anyone else, are placed upon the serviceman.
- When failure of the serviceman to return home would create a severe and unusual hardship on either himself or his family.

Fleet, area, and force commanders have been directed to modify their instructions to comply with this new directive. More information may be found in BuPers Inst. 1050.7.

Additional WO Selections Made from 1957-8 Lists.

Nine first class and 30 chief petty officers have been issued temporary appointments to Warrant Officer, W-1.

These appointments are from eligibility lists established by selection boards convened 5 Feb 1957 and 4 Feb 1958.

Regular Navy appointments were broken down into the following designators: Aviation Operations Technician (7112), two; Boatswain (7132), four; Surface Ordnance Technician (7232), one; Machinist (7432), six; Electrician (7542), two; Aviation Electronics Technician (7612), four; Electronics Technician 7662, one; Ships Clerk (7822), one; Supply Clerk (7982), twelve; Aerographer (8212), one; Civil Engineer Corps (8492), two; Medical Service Warrant (8172), two; Dental Service Warrant (8182), one.

A Roundup on Horse Sense, Straight from the Legal Experts

For somewhat more than a year, a series of articles titled "Legal Assistance Notes," by LCDR Nathan Cole, Jr., USNR, have appeared in the Navy's JAG Journal and, from time to time, excerpts have appeared in this publication.

It occurred to us that it might be useful if you were to have the benefit of this expert legal advice all in one neat package. Here it is, boiled down through the courtesy of JAG Journal and LCDR Cole:

Advice is Better Than Sympathy

No matter how good our intentions, it seems that the best of us sooner or later run into a situation beyond our control. If our problem is concerned with legal matters, it's wise to find out what the Navy has to offer in the line of legal help.

Every major shore activity, every large staff and most large combatant ships have a Legal Assistance Officer (LAO). Smaller activities have a "referral officer," who can direct you to the nearest legal assistance officer or, if there is not one in your vicinity, can help you locate the nearest civilian Committee on Legal Services to the Armed Forces. If you are near an Army or Air Force activity, you are entitled to legal assistance from these sources if it is available.

Your Navy legal assistance officer will be a licensed attorney. He also occupies a unique position in the Navy: He is outside the chain of command so far as his legal assistance work is concerned. He may be professionally consulted by anyone—from seaman recruit up. He holds anything you may tell him in absolute confidence. He cannot disclose your confidence without your permission nor may he be ordered to do so by a superior. He may correspond unofficially with other legal assistance officers if your problem requires such correspondence. He may refer you to a local practicing attorney if the situation indicates.

Legal assistance is intended to help you with your personal problems by providing legal advice and legal papers such as wills, powers of attorney, affidavits, and similar documents. Although an LAO cannot represent you in court nor become your personal attorney, he can recommend course of action and can draft letters and documents for your signature.



"You have a shy, gentle disposition"

Legal assistance does not include strictly official matters nor does it provide counsel for courts-martial, investigations, or appearances before various boards. Official matters such as personnel or disbursing problems should be taken up with the bureau or office concerned, and qualified counsel for courts and boards are provided by commands concerned.

Here are a few points to remember if you want to get the most out of the Navy's LAO service:

- If in doubt, ask for advice before you sign any contract or make a major purchase. As we said before, advice is better than sympathy. If you do get into difficulty, try to get expert advice immediately.
- Talk to your legal officer or a lawyer in person. A telephone conversation is usually unsatisfactory. Your question may be one that cannot be answered immediately.
- Take all the letters, documents and papers with you. Your legal officer will prefer to see the papers themselves instead of using your recollection or interpretation.
- If in doubt, see your legal officer. Don't worry about bothering him because your problem is relatively small. Legal problems are sometimes like fires—it's easier to deal with them when they're small.
- Tell both sides of the story, and all the story. It might be embarrassing to admit you were foolish, but here you are at least protected by the privacy of his office. If you hold out on him, he simply can't act in your best interests.

Legal assistance is, of course, free. If, after talking it over with your LAO, you decide that a civilian at-

torney is needed, that attorney will have to be paid although he will sometimes adjust his fee to fit your financial condition. If you are completely without money, Legal Aid or free civilian legal service may usually be found. Legal Aid is normally available only where there is a real need and you are absolutely unable to pay.

When You Pay Rent

If you rent without signing a lease you usually become a tenant from month-to-month, and you cannot move nor can the landlord put you out (except for nonpayment of rent or creating a nuisance) without giving the notice required by state law. Details vary from state to state and should be checked in your locality.

This does not mean that the landlord can physically stop you from moving, but it does mean that you can become liable to him for damages suffered as a result of your moving without proper notice and in some states he can hold your furniture until the rent is paid.

A lease is simply a rental contract and binds you and the landlord just as any other contract.

The fact that you are in the armed forces and receive orders requiring you to move does not release you from a lease unless there is a "military clause" in the agreement. Such a clause generally provides that, upon the receipt of orders, the lease may be ended by the tenant giving a certain amount of notice to the landlord.

If you move before the end of the time stated in the lease, you may be sued for damages. Again, states may differ on the amount which may be claimed but they all recognize the right of the landlord to sue you. If the landlord is successful, you may find yourself in the discouraging position of paying rent in two places.

There are a number of points to consider before signing your name to a lease. First of all, the rent. Rents are usually high in areas near military installations. Don't forget that unless utilities are furnished, you will have that cost in addition to your rent. If, after moving into an apartment or house, you find that you can't afford to pay the rent, that's just too bad. It still isn't good enough reason for breaking your lease.

Look at all the angles before you commit yourself. Inquire about the neighbors, investigate play areas for the children, parking space for your car, location of schools, churches, bus lines and shopping centers. Inspect the actual property carefully. As a rule, the landlord rents "as is."

You can't always get just what you want, but shop around until you find something that looks as if it might be suitable. Again, just because you don't like the place is no excuse for breaking your lease.

Read your lease carefully and don't sign anything you're not prepared to live up to. Make sure there is a military clause. If the landlord promises you something or agrees to waive a requirement, have it written in the lease. If not, it doesn't mean a thing. If you have any doubts, get your advice *before* you sign.

Again—advice is better than sympathy.

You Are Still Responsible

The fact that you are in the naval service and have no permanent street address in a particular city or state does not affect your rights as a citizen. At the same time, it does not relieve you of the obligations of good citizenship.

The Soldier's and Sailor's Civil Relief Act of 1940, as amended may, for example, give you protection from multiple taxation but it does not relieve you of your liability for taxes to the State of your legal residence.

Generally speaking, here's the situation:

Income Tax—Your liability for income tax on your military pay is to your legal residence (home state) only. However, *income other than your military pay* can be taxed by the State in which it is earned and also by your home state.

Personal Property Tax—You are liable for personal property tax only in your home state. Generally speaking, the husband, as head of the household, is considered to be the owner of the household furnishings. An automobile is personal property but in different jurisdictions, may be subject to different types of taxes.

Real Property Tax—Real property tax is, of course, payable only where the property is located. (Real estate is real property.) The fact that you buy a residence in the locality where you are stationed by reason of mili-

tary orders does not, in itself, determine your legal residence for other tax purposes.

Automobile Registration—You may register your automobile either in your home state or the state in which you are residing. You are not entitled to register in a third state.

Consider these points also:

- If your auto is registered in your home state, then all the necessary fees, licenses and taxes must be paid to that state. Your operator's permit from your home state should be kept up to date. You may be required to obtain a special plate or sticker in the locality where you are living. This is normally free or available for a small handling charge.

- You may register your auto, if you wish, in the state where you are residing because of military orders. If you do, you must normally comply with the local (city or county) registration laws, get an operator's permit from that state, and comply with the usual inspection, insurance and other

NOW HERE'S THIS

So Ice To Know

Cool heads prevailed when the Naval Air Station, Norfolk, Va., ran into a problem while moving one of its buildings.

When the structure was set in place at its new location the movers discovered that the blocks on which the building rested were too low to allow the moving gear to be pulled out from underneath.

A neat bit of cold logic provided the solution.

The building was lifted up. Blocks of ice were set on the foundation. The moving gear was removed. The ice was then sprayed with a hose to insure uniform melting while the building settled into place.

Well water ya' know!



laws. Although the act of registration does not automatically make you liable for local taxes, some states impose an excise tax for the privilege of registration. This must be paid if you wish to register your car in the state.

Voting and Taxes—The right to vote is usually restricted to "residents" of a State—the term "resident" in this case being synonymous with "citizen." However, if you are a citizen of a State, you are also responsible for paying its taxes.

A few states will permit military personnel to vote without incurring tax liability if you have the required actual residence; this, however, should be carefully investigated beforehand. It is generally better to vote by absentee ballot.

The Soldier's and Sailor's Civil Relief Act does not apply to your dependents. If your wife has an income or owns personal property in her own right (such as an automobile or jewelry), she is liable for local taxes. She must in most instances get a local automobile operator's permit and register the car locally if she holds title to it.

Usually, if the car is owned *jointly*, it must be registered locally. The domicile of your wife generally follows yours, but for tax purposes she is generally considered as a separate entity. Therefore, she may be liable for income, personal property and other taxes when you are not. Her share (or one half) of jointly owned property may be taxed locally.

Residence and domicile of service personnel are complicated and frequently confusing problems. Very generally speaking, "residence" means the place where you are actually living. "Domicile" or "legal residence" means the "home state" or state of which you are a citizen. It is legally impossible not to have a domicile.

Tax laws are usually based on actual residence or presence in the state, which is the primary reason for one of the important sections (514) of the Soldier's and Sailor's Civil Relief Act. Without the Act, you could conceivably be taxed by two or more states in one year because you were living there on the day taxes were assessed.

The fact that you may consider yourself exempt from local taxation does not mean that the local authorities cannot question you concerning

your liability. If this happens, cooperation will usually do you more good than harm.

If you feel that you are being unlawfully taxed, contact the Taxation Branch of the Office of the Judge Advocate General, or your local LAO. If it is necessary to pay a tax before the question is resolved, pay it "under protest." If you refuse to pay, or refuse to file a return, you may be liable for criminal penalties.

Various states and localities will handle these problems in different ways. When you are transferred to a new duty station, you would be wise to inquire about local conditions as soon as possible.

Caveat Emptor—That's You

Very freely translated, this means if you get stuck with a bargain that's no bargain, it's your own fault.

Many of the visitors to any Legal Assistance Office are those who have bought things they couldn't afford—in many cases, they did not even want—or who are saddled with a contract for hundreds of dollars more than they expected.

If you go to a reputable dealer—and the vast majority of dealers are reputable—you'll be saving yourself a lot of trouble. But everybody has run into the other kind.

Here are a few techniques you'll want to recognize if you would avoid an unhappy situation:

- *Tricky advertising* (but usually not actually illegal)—This frequently takes the form of misleading wording such as "Twenty Dollar Value—Sale Priced at Only Ten Dollars."

The catch here is, of course, that "value" is anything you want to name. You'll notice that the original price is not mentioned. Or there may be a very large catch line with a very small asterisk at the end. This asterisk can refer to some even smaller type on another part of the page which explains the catch line but which most people never bother to read.

There may also be a tremendous "Going Out of Business," or "Fire Sale," with "slashed prices." Slashed from what? We are all familiar with places that have been going out of business for years.

- *The fast-talking door-to-door salesman*—This is the type who appears in residential sections—more often than not, development or apartment areas—and more often than

not, during the day when you are at work. He talks so fast, and has so many answers that many a young housewife has signed a contract for several hundreds of dollars before she knew what she was doing. It's no concern of the salesman that you can't pay for it.

- *The dollar-down, dollar-a-week deal*—A rosy picture is painted of how you can enjoy the merchandise while you are paying for it—and the down payment is so small. The salesman doesn't bother to mention that the "dollar-a-week" routine goes on for a long, long time, sometimes long after the item is worn out or discarded.

- *The "buddy" approach*—This lad has the knack of making you feel that he's your long lost friend. He promises anything and everything and tells you he's losing money, but he doesn't really care because he's gaining a friend.

That's not the way it works. He doesn't lose money. For some strange reason, his assurances never turn out quite the way you understood him. When it comes time to pay, you find that the warm friend has become a cold, cold stranger—if you can find him.

The only moral to these character sketches is—be careful. Cultivate sales resistance. Consider the long-range aspects of an installment purchase, not just the down payment or the monthly payment. Above all, never, no never, sign a blank contract.

Generally speaking, the seller is much more anxious to sell than you are to buy. If you are given a high-pressure pitch, tell the man you will think it over and get in touch with him later. Then really think it over.



"Have you a minute, chief, I think we may have found one of those man-eating clams."

If he says the deal can't wait, chances are you are better off not making it at all.

One final thought: The salesman has had more experience in selling than you have in buying.

Installment Buying

Installment buying, properly used, can be a boon and a pleasure. At the same time, it probably causes more heartache and misunderstanding than any other single form of business dealing.

The most common form is the conditional sale where, for a small down payment, possession of the property is given to the purchaser (that's you) but title is reserved by the seller.

You must then make periodic payments, usually monthly, and when the full purchase price, plus interest and charges is paid, you then—and only then—own the TV set, auto, deep freeze, or what-have-you.

This procedure enables you to buy gadgets which are your present heart's desire. Sometimes you pay dearly for this privilege. In effect, to get possession of the item, you borrow the balance of the purchase price from the seller or from a finance company, and repay the money plus interest over a set period of time.

For the privilege of getting immediate possession of the property, to reimburse the lender for the losses caused by financing and to protect the lender's interest, you also pay "finance charges."

Interest is regulated by law, but in most cases, finance charges are not. Therefore, over a period of time you may find yourself paying from 20 to 30 per cent more than the actual cost of the article purchased. It doesn't always work out this way, but it's a point to watch for.

The results are drastic if you fail to make your payments on time. Most conditional sales contracts provide that, upon default, the seller or lender may repossess the property without going through court, may sell the property again and, if the proceeds of the second sale do not satisfy the balance due, may sue you for the difference.

You may then find that you have not only lost the money you have paid, plus the property, but you have a judgment against you for still more money. Life can be pretty grim at such a time.

If you must use a conditional sales contract, you'll be happier if you bear these points in mind:

- Don't buy anything "on time" if you don't really need it. Save your money and pay cash. By the time you have the cash in hand, you'll probably decide you don't want the gadget, anyway.

- When you are getting ready to buy, shop around. Don't be bullied, dazzled or fast-talked by a salesman into buying something you have no need for. Generally speaking, this is a buyer's market. If you don't buy today, you can get the same thing, or something better, tomorrow or next week. Don't accept at face value everything the salesman says. Remember, he's trying to make a sale.

- If you *must* finance, try a bank or a private arrangement first. You'll get a better deal. Again, shop around. You don't have to deal with the company the seller recommends.

- NEVER sign a contract in blank, regardless of what the seller tells you. Never sign one that you have not read and completely understood. If you can't figure it out (and who can?) take it to someone who can tell you what it means.

- Don't figure your pay check down to the last penny. If an emergency should arise, you may be unable to make your installment payments and lose both your money and the item you thought you were buying.

Small Loans

Small loans have their place since, if your credit is good and if you need money immediately, you can frequently get it in a very short time on your signature only. Such loans can be expensive, however, and should not be made unless absolutely necessary.

State laws controlling the conditions under which such loans may be made vary widely. Here's the way they operate in one state:

The legal rate of interest for normal business dealings is six per cent per year. However, because of the peculiar nature of the small loans business, a small loans company must be licensed by the state, may make loans up to \$600, and is permitted to charge interest at the rate of two and one-half per cent on the unpaid balance up to \$300 and one and one-half per cent per month on the

remainder over \$300. No other charge of any kind may be made.

Installment payments may not be contracted for longer than 21 months. The loan may be paid off at any time with interest paid up to the day of payment.

Thus, if you urgently need \$200 and are sure you can repay it the following month, you can get this sum for \$5—which isn't bad.

However, if you plan to repay this amount at the rate of \$20 a month you will repay \$232.96 over a period of 12 months. This adds up to roughly 32 per cent interest per year on \$200—which isn't good.

If you miss, let us say, your third payment and then catch it up, you would have to repay \$238.04. This adds up to roughly 38 per cent per year—which is less good.

Have You Tried Item GC 7339-285-4298?

In our never-ending search for news — sometimes lightly referred to as "scrounging around for stuff" — ALL HANDS usually seeks material of interest to the majority of its readers. However, we also consider it part of our job to keep the minority informed of important developments which might affect them. So, on behalf of the minority — the very small number of Navy-men who drink coffee — we pass along this item from the monthly Newsletter of the Bureau of Supplies and Accounts.

For the men on board Navy ships practically any hour of the day or night can be coffee time. Now, thanks to Number GC 7339-285-4298 in the *Catalog of Navy Material*, it will also be possible for the men away from the ship on beach guard, boat patrols, stores working parties and such to share in the stimulation of a steaming cup of "joe."

Item GC 7339-285-4298 is a portable vacuum jug which the Bureau of Ships has now added to the authorized allowance list for most ships. It is as versatile and rugged as the sailor it was designed for, and has a capacity somewhat greater.

The three-gallon container will provide 50 eight-ounce cups of beverage. It is break-proof and

Interest may not be compounded, but is figured each month on the unpaid balance. If you miss a month, you have to pay the interest for that month even though that interest is not added to your principal unpaid amount.

It takes very little figuring to realize that, if you miss several payments, particularly the early ones when the principal amount is large, the actual annual interest rate you are paying increases rapidly. You may find yourself paying mostly interest for several months and reducing the principal very little.

There's one bit of advice that the LAO gave us which could be worth its weight in gold. When you're reaching for your pen or your wallet, take a pause.

It's a pause that pays dividends.

will maintain the temperature of its contents for many hours. Not only that, but it's easy to clean, because of its wide mouth and stainless steel shell and spigot. The spigot is protected from damage by a strong brace and can be removed without tools.

In addition, the jug will float even when filled. So far, there have been no reports of UDT swimmers towing the jug along with them, but there have been some enthusiastic comments from other satisfied users.

uss *Wyandot* (AKA 92) used the containers to keep cargo-handling personnel continuously supplied with coffee, bouillon and hot chocolate during Operation Deep Freeze off loading in Antarctica.

uss *Intrepid* (CVA 11) serves coffee from the jugs on the hangar deck during rest breaks from loading ammunition.

Forrest Sherman-class destroyers have set up the jugs on the mess line to serve an optional hot or cold drink supplementing the coffee in the serving line urns.

And, Navy Exchange mobile truck units have also found the jug a handy dispensing device.

The containers have proved valuable not only as morale boosters, but also as a means of increasing work efficiency.

EDUCATIONAL OPPORTUNITIES OPEN TO EN

	PROGRAMS AND OFFERINGS	DIRECTIVES	SIGNIFICANT DATES	RATINGS, SEX, CITIZENSHIP
UNDER TRAINING AND PROMOTION PROGRAMS	NAVY ENLISTED ADVANCED SCHOOL PROGRAM (NEASP) Provides to selected petty officers a total of 4 years of college level engineering training in civilian universities for two year intervals, with 2 year service and operating assignments intervening. (Personnel selected with officer status by end of first 2 years will continue in school without 2 year interval of fleet training.)	BuPers Instr. 1510. 69C	Applications for test must be submitted to BuPers between 1 July and 15 Oct of year preceding selection	Male PO's 3 and above Regulars and Reserves on active duty (including TAR) U. S. Citizenship
	NAVY ENLISTED SCIENTIFIC EDUCATION PROGRAM (NESEP) Provides to selected enlisted personnel, men and women, sufficient continuous training, not to exceed 4 years, in scientific and engineering subjects at civilian colleges, to qualify for a baccalaureate degree.	BuPers Instr. 1510. 69C	Applications for program must be submitted to BuPers between 1 July and 15 October of the year preceding selection	All ratings, pay grade E2 or above, Regulars and Reserves (including TAR) U. S. Citizenship
	NURSING EDUCATION PROGRAM Provides 4 years of nursing education at accredited colleges and universities to Hospital Corps Waves at pay grade 3. Dept. of Navy pays expenses.	BuPers Instr. 1120. 27A	Applications should reach BuPers by March of each year	Enlisted Hospital Corps Waves, Groups X and XI U. S. Citizenship
	U. S. NAVAL ACADEMY Appointment of 160 midshipmen authorized annually from enlisted men of Regular Navy and Marine Corps, and 160 from Reserves. Appointments are made on basis of C. O.'s recommendation and scores on the Naval Academy Entrance Examinations.	BuPers Manual, Articles C1203 and D1101; Annual BuPers Notice	Applications should be made from March through June annually Preliminary examinations for admission to USNPS administered 5 July annually	All ratings Men U. S. Citizenship
	NAVAL RESERVE OFFICERS TRAINING CORPS (NROTC) Program offers 4 years of Navy subsidized education in 53 colleges and universities. Two hundred appointments are offered annually to enlisted personnel on active duty in the Navy and Marine Corps.	BuPers Inst 1111. 4B; BuPers Manual, Articles C1201, C1202, C1204, and D1102	Nominations begin 1 August annually. Terminated by BuPers Notice	All ratings Men U. S. Citizenship
	COAST GUARD ACADEMY Enlisted naval personnel appointed on basis of examination. Four years of college education at U. S. Coast Guard Academy, New London, Conn.	BuPers Inst 1111.7, BuPers Manual, Article C1201(2)	Applications postmarked not later than 15 January of year desiring to be considered Examinations on or about 4th Monday and Tuesday of February (announced annually)	All ratings Men U. S. Citizenship
NAVPER5 92567				

TO ENLISTED PERSONNEL ON ACTIVE DUTY

	AGE, MARITAL STATUS	TIME IN	TIME OBLIGATED	EDUCATION AND/OR GCT	RESULTS IN	
CITIZENSHIP s 3 and and Re- active duty (AR) Citizenship	Not have reached 18 years of age by 1 July of year selected	3 years active duty	4 years as of 1 July of year selected; or if Reserve, enlist for 4 years	High school graduate or successful completion of GED GCT plus ARI to equal 118, or higher Must satisfy college entrance requirements	Baccalaureate degree; commission if otherwise qualified	NAVY ENLISTED ADVANCED SCHOOL PROGRAM
ings, pay or above, nd Reserves (TAR) Citizenship	Not have reached 18 years of age by 1 July of year selected	On active duty	6 years as of 1 July of year selected; or if Reserve, enlist for 6 years	High school graduate or successful completion of GED GCT plus ARI to equal 118, or higher Must satisfy college entrance requirements	Baccalaureate degree; commission if otherwise qualified	NAVY ENLISTED SCIENTIFIC EDUCATION PROGRAM
d Hospital s, Groups X Citizenship	Unmarried and must agree not to request discharge by reason of marriage during training or active duty obligation Will not have reached 33½ upon expected date of commissioning	Minimum of one year; with six months in ward under nurse's supervision. Group XI candidates may request waiver.	One year for each year of nurse's training received	High school graduate, upper half of class; or 50 or above on each test in high school GED test battery Must satisfy college entrance requirements	Commission as Ensign in Nurse Corps Baccalaureate degree in nursing	NURSING EDUCATION PROGRAM
ings Citizenship	Single, not have been married, must agree to remain single until commissioned Not less than 17 or more than 22 years of age on 1 July of year in which entrance examination taken	Have enlisted on or before 1 July of year preceding administration of Naval Academy Entrance Examination	Four years after graduation	At least 3 years of high school Satisfactory completion of 2 years of algebra or geometry; or one year each of algebra and geometry Have GCT plus ARI to equal 105, or higher	Commission as Ensign, Regular Navy B. S. Degree	U. S. NAVAL ACADEMY
ings Citizenship	Single, and must agree to remain single until completion and commissioning Shall have reached 17th birthday on 1 July of year to enter program. If over 21 must have enough college education to complete college and receive commission by 25 years of age	On enlistment, or extension, not expiring before 1 Sept of year entering college under program	Four years active duty after commissioning; may be ordered to inactive duty for 2 years as Reserve	High school graduate or service accepted equivalent Must meet entrance requirements of college or university concerned	Commission as Ensign, Navy or 2nd Lt., Marine Corps Baccalaureate degree	NROTC
ings Citizenship	Single, must not have been married, must agree to remain single until commissioned Not less than 17 or more than 22 years of age on 1 July of year for which application is made	None specified	4 years active duty subsequent to commissioning	High school graduate from accredited high school Following years credit: high school or college algebra 2, plane geometry 1, English 3, optional 9	Commission as Ensign in Coast Guard B. S. degree	COAST GUARD ACADEMY

(Cont. next page)

EDUCATIONAL OPPORTUNITIES OPEN TO ENL

UNDER INFORMATION AND EDUCATION PROGRAM	PROGRAMS AND OFFERINGS	DIRECTIVES	SIGNIFICANT DATES	RATINGS, SEX, CITIZENSHIP
	USAFI COURSES Elementary through junior college correspondence courses. Initial enrollment fee, \$5.00.	BuPers Manual, Article D2103; USAFI Catalog, NavPers 15857C; BuPers Instr. 1560.15	Continuous program	All ratings, both sexes
	PARTICIPATING COLLEGE CORRESPONDENCE COURSES Thousands of correspondence courses from some 40 or 50 civilian colleges and universities at reduced rates, through USAFI.	BuPers Manual, Article D2103; USAFI participating college catalog, NavPers 15819E	Continuous program	All ratings, both sexes
	USAFI GENERAL EDUCATIONAL DEVELOPMENT TESTS (GED'S) High school and college level test batteries used to determine whether through formal and informal educational experience a man has acquired the equivalent of a general high school or first year college education.	BuPers Manual, Article D2103; USAFI Catalog, NavPers 15857C	Continuous; if taking GED to meet educational requirements for a Navy school or promotion program, complete at least six weeks before deadline to allow for grading and reporting	All ratings, both sexes
	TUITION AID Provides up to 75% of the tuition up to \$7.50 per semester hour (\$5.00 per quarter hour) for attendance at accredited junior colleges, colleges and universities. Authorized: undergraduate courses toward first baccalaureate degree; graduate courses in mathematics, physical science, international relations and management.	BuPers Inst 1560.10A	Beginnings of college semesters and quarters	All ratings, both sexes
	NAVY CONDUCTED CLASSROOM INSTRUCTION Classes for ten or more organized as needed in ships and on stations, using USAFI texts and study guides. Instructors may be naval personnel, or civilians paid under the Instructor Hire Plan.	BuPers Manual, Article D2103; BuPers Instr. 1560.15	Continuous program	All ratings, both sexes

Broader Program Provides for Assignment to School on Any On-Board Reenlistment

The program offering school assignments as an incentive for on-board reenlistment has been broadened to cover any on-board reenlistment — not just the first one. At the same time the program takes in all ratings and makes practically any enlisted school available.

From now on, if you reenlist on board your present duty station, meet the entrance requirements and are otherwise eligible, you may request any school listed in the latest *Catalog of U. S. Naval Training Activities and Courses* (NavPers 91769C) or *Official Bulletin of Naval Schools and Courses of the Naval Air Technical Training Command*. This is a big change from previous programs

which were restricted to first reenlistments and applied only to certain Class B and C schools and a limited number of ratings.

The liberalized program also covers conversion training, so that reenlistees who are eligible for such training under the latest BuPers Instruction of the 1440.18 series may now request it under both that instruction and the new one on schools for reenlistees.

The new program is set forth in BuPers Inst. 1133.5A, which applies only to those who reenlist in the Regular Navy on board their present duty stations. In granting school assignments these individuals will be given priority ahead of people who reenlist at receiving or recruiting stations.

The program will be conducted to conform as nearly as possible to the

schooling pattern which provides formal school training during normal rotations. However, some deviations from the pattern will be necessary, since most normal rotations take place under Seavey/Shorvey and since the times of these rotations don't usually coincide with expirations of enlistment.

In a departure from previous programs, the present one has been set up so that a potential reenlistee will have his school assignment in hand before he signs up for his next hitch. If you are found unqualified for the school you request, or there is no quota available for that school, you will be informed of that fact before your reenlistment date.

Here's how the program works:

- At least three months before your reenlistment date you should submit your request for a school.

TO ENLISTED PERSONNEL ON ACTIVE DUTY (cont.)

CITIZENSHIP	AGE, MARITAL STATUS	TIME IN	TIME OBLIGATED	EDUCATION AND/OR GCT	RESULTS IN	
ings, both	No restrictions	120 days or more	None	Should have prerequisites for specific courses as given in USAFI Catalog	Navy — accepted as equivalent to same course taken from accredited civilian school Civilian schools — majority accept for academic credit if suitable to course being taken	USAFI COURSE
ings, both	No restrictions	120 days or more	None	As specified by individual college or university	Academic credit as granted by educational institution concerned	COLLEGE CORRESPONDENCE COURSE
ings, both	No restrictions	120 days or more. Civilian forms of GED's available through state departments of education	None. Should have time to complete battery.	As determined by counseling interviews	Passing scores on high school GED equivalent to high school graduation in Navy, and most states In Navy, passing scores on college level GED equivalent to first year college; colleges and universities grant varying amounts of credit	USAFI GENERAL EDUCATIONAL DEVELOPMENT
ings, both	No restrictions	Second or subsequent enlistment	Until completion of course on which tuition aid has been paid	Prerequisites as prescribed by the college or university concerned	Academic credit as granted by educational institution concerned	TUITION AID
ings, both	No restrictions	120 days or more	None Should have time to complete course	Should have prerequisites for specific courses as given in USAFI Catalog	If USAFI test successfully completed, same as for other USAFI courses (described above)	NAVY CONDUCTED CLASSES

Those who submit their requests less than three months ahead of time will still be eligible for consideration, but there is no guarantee they'll receive a reply before their present enlistment ends. All requests will be submitted via the normal chain of command. They must include the following information, as applicable: Rotation tour date, date of reporting to present command, sea duty commencement date and an indication as to whether or not a Seavey/Shorvey card has been submitted.

- If you are found qualified for the school of your choice and there is a quota available, you will receive provisional orders to that school based on the condition that you go through with your reenlistment.

- If you are immediately available for transfer according to Bureau Seavey/Shorvey records, you will be

assigned to the first available class. If you would not normally be rotated, except for the fact that your enlistment is expiring, you will be ordered to a class with a convening date that allows at least 18 months on board present duty station before transfer.

- In most cases, when the reen-

listee completes his training he will be assigned to sea duty. Those who were on Seavey when ordered to school may be returned to sea for about one year. Those who do not successfully finish will be assigned at sea.

Since the opportunity offered by BuPers Inst. 1133.5A is intended only for those Navymen who possess the qualities that would warrant career training, an important factor in considering your request will be your commanding officer's endorsement. This will include an extensive and informative word evaluation of your technical worth in your present rate, your academic ability as shown by performance on correspondence courses and in service schools, your leadership ability, your general attitude and motivation and your future value to the Navy.



Here's a Report on Scholarships Available to Navy Juniors

FIGURING OUT WHERE to get the money to send a son or daughter to school can be quite a problem, as most parents know. If that's one of your current worries, you may be interested to learn that there are a number of scholarships especially set up for the children of armed forces personnel. Some of these awards are available only to children of Navy or Marine Corps families.

The Navy itself has no funds for the awarding of scholarships or for any other form of student aid to Navy dependents. However, through the years, certain individuals and various organizations have established scholarship funds for the dependents of active, retired or deceased members of the armed forces. In some cases, at the donor's request, the Chief of Naval Personnel performs supervisory functions in connection with the scholarship awards. These functions include evaluation of the applicant's records, participation on final selection committees and the periodic release of information on the awards.

In general, the eligibility requirements for the awards are these:

- All applicants must be sons or daughters of armed forces personnel.
- Recipients will be chosen by scholarship selection committees on the basis of need, scholastic achievement, leadership and character.
- Usually, applicants must be graduates of accredited high schools or the equivalent, or be qualified for graduation before the beginning of the next college year. Applicants already working at the college level automatically fulfill this requirement.
- Unless an applicant is sure he will be admitted to the school of his choice, he should get the school's approval of his admission before he applies for a scholarship. The submission of an application for a scholarship should not be considered a request for admission. Prospective students are urged to apply for admission not later than 1 March of the year in which they plan to embark upon their college careers.

The funds made available through the scholarships are given directly to the school involved. The awards are made as outright grants. However, those who wish to do so may repay all, or part after they finish school.



"I told Cranshaw here, I actually saw you smile yesterday."

The awards supervised by the Chief of Naval Personnel include:

• **Clausey Medal of Honor Scholarship**—This aid is given by a foundation established in memory of the late LT John Joseph Clausey, USN. It is to be used at or beyond the college level, by a child of an officer or enlisted man of the Navy or Marine Corps who was killed in action, died or was disabled as the result of wounds received in actual combat during World War II or the Korean fighting. The award is made each year in an amount not to exceed \$500. It may be given to one individual or it may be divided between two or more at the discretion of the Selection Committee. Application forms may be obtained from—and must be returned to—the Chief of Naval Personnel (Attn: Pers-G221).

• **Navy Wives Clubs of America Scholarship**—Established in 1953, this is an annual award available only to the sons or daughters of enlisted men in the first nine pay grades. It is to be used in obtaining college, vocational, business or other training which will enable the recipient to make more valuable contributions to society than would otherwise be possible. To apply, the student must be the child, legally adopted child or stepchild of an enlisted member of the Navy, Marine Corps or Coast Guard on active duty, retired with pay or deceased. The grant amounts to at least \$300 per academic year for the boy or girl selected. The number and value of the awards may vary from year to year, depending on funds avail-

able. Application forms may be obtained from: The Chief of Naval Personnel (Attn: Pers G221); the Secretary of any Navy Wives Club; or Mrs. Jeanette Davis, Secretary of the Scholarship Foundation, whose address is 2079 Chase St., Des Plaines, Ill. Applications must be returned to the Chief of Naval Personnel (Attn: Pers-G221).

• **Naval Academy Women's Club Scholarship**—This four-year scholarship is awarded annually in the amount of \$300 per year. The recipient must be the natural born, legally adopted daughter or stepdaughter of a Naval Academy faculty member or of an active, retired or deceased Regular Navy or Marine Corps officer. The necessary forms may be obtained from the Chief of Naval Personnel (Attn: Pers G221) or from the Scholarship Chairman, Mrs. Perley M. Clark, 102 Conduit St., Annapolis, Md. They must be returned to the Chief of Naval Personnel (Attn: Pers G221) upon completion.

• **Naval Officers Wives Club of Washington, D. C., Scholarship**—This year the club will award a self-aid scholarship grant, of not less than \$500, to a worthy young man between the ages of 16 and 20 who wishes to prepare for entrance to the Naval Academy and a subsequent career as a naval officer. The recipient must use the grant for his senior year's work in a secondary school or its equivalent and apply it toward his academic work in a school recognized by the Navy as offering adequate preparation for Academy entrance. When applying, the student must present a doctor's certificate that he is fully qualified to pass the physical examination for the Academy. Requests for application forms should be addressed to the Secretary of the Naval Officers Wives Club Scholarship Fund, Mrs. James M. Farrin, 4606 Overbrook Road, N.W., Washington 16, D. C., or to the Dependents Aid Section, Pers G-221, Bureau of Naval Personnel, Washington 25, D. C.

In requesting forms from the Bureau of Naval Personnel the applicant should specify the scholarship for which he or she wishes to compete. In filling out the forms applicants are urged to include all the

information requested and to make certain that transcripts and letters of recommendation, if requested, are forwarded before the 1 March deadline. Incomplete applications will be disqualified automatically.

Besides the Bureau supervised scholarships, these other sources of student aid are available:

• **Valley Forge Military Academy Scholarships**—Eight of these awards are made each year to the sons of Regular officers of the armed forces. They are given for a three-year period and amount to \$1015 per year—about half of the all-inclusive tuition rate. The applicant, who must have high academic standing and an interest in military life, should be either between 14 and 16 years old preparing to enter the 10th grade and who will go on to Valley Forge to receive his secondary school diploma, or a young man preparing to enter the 12th grade, who will receive his secondary school diploma and go on for two years of junior college and an Associate in Arts diploma from Valley Forge. Admission to Valley Forge is by written examination, preferably given at the Academy. When that is impossible the test given may be at a location more convenient to the candidate. Applications should be directed to the Registrar, Valley Forge Military Academy, Wayne, Pa., by 15 June of the year in which the candidate plans to enter the school. The school will then forward the candidate an official application form and a view-book and catalog.

• **Culver Military Academy Scholarships**—Information on these awards, which are given to the sons of military personnel, may be obtained from Major General Delmar T. Spivey, USAF (Ret.), Superintendent, Culver Military Academy, Culver, Ind.

• **Jango Scholarships**—These awards are for the daughters of commissioned officers in the U. S. armed forces living in the Washington, D. C., area. For information write to Mrs. Evelyn M. Hemenway, Executive Secretary for Jango, 1027 20th St., N. W., Washington, D. C.

• **Mount Vernon Seminary**—This school grants a 10 per cent reduction in tuition for boarders and day students who are the daughters of Regular officers in the armed forces. For further details contact Mount

Vernon Seminary and Junior College, 2100 Foxhall Rd., N. W., Washington, D. C.

• **Massachusetts Institute of Technology**—The sons of Regular armed forces officers, admitted to the Institute as undergraduate students, will pay half the regular tuition upon the recommendation of the Faculty Committee on Undergraduate Scholarships. The total number of these awards may not exceed 10 per year.

Inquiries may be addressed to the Dean of Freshmen, Massachusetts Institute of Technology, Cambridge, Mass.

• **Society of Sponsors of the United States Navy**—The society annually awards one or more scholarships, each for one academic year at a preparatory school for the U. S. Naval Academy, to sons of deceased or retired Navy and Marine Corps personnel. Requests for application

WAY BACK WHEN

Mates in the Navy

The term "mate" is part of our sea language, but did you know that it was the official title of a Navy rating at one time?

It goes back to the early days of the sea service, appearing first as "Master's Mate."

In the year 1799 men with these ratings were recognized by the law as warrant officers, except when acting under temporary and probationary appointments. Warrants were issued to them after at least one year's sea service under a probationary appointment.

After 1843 no more warrants were issued. But those who had been appointed continued to hold their office and receive their pay. In 1847 a Navy Department regulation stopped commanding officers from making these appointments. Then came the Civil War and an expansion of the Navy.

On 7 Oct 1863, the Secretary of the Navy issued the following circular: "Seamen enlisted in the naval service may hereafter, as formerly, be advanced to the rating of master's mate, and such rating may be bestowed by the commander of a squadron, subject to the approval of the department, or by the commander of a vessel, with the previous sanction of the department."

"Seamen rated as master's mates will not be discharged with that rating, and will be considered as disgraced to seamen upon the expiration of their enlistment, but upon their immediate reenlistment the rating of master's mate may be considered as renewed."

By act of 3 Mar 1865, their names were changed to "mates," and the Secretary of the Navy was authorized to increase their pay and to rate them from seamen and ordinary seamen who had enlisted in the naval service for not less than two years. The act of 15 July 1870 gave formal recognition to mates as a part of the naval forces and their pay was fixed at \$900 when at sea, \$700 on shore duty,



and \$500 on leave or waiting orders.

The quota of mates in the Navy was not fixed, but from a maximum of about 842 on 1 Jan 1865, the number gradually diminished until 1 July 1894, when there were 27 remaining.

Before 1 Aug 1894, there had been no authority for the retirement of these men. But on that date a law was passed increasing the pay of those in the Navy and providing that they should have the benefits of retirement the same as warrant officers. One purpose of the act was to make the retired pay of mates large enough to induce them to retire.

By an act of 1906 the mates on the Navy retired list were promoted to the next higher grade if they had creditable Civil War service, which most of them had. They were given warrant rank and ranked with the lowest grade of warrant officer. They were still called mates, but whether they were officers or enlisted men apparently had many people confused.

A year after the passage of this act, the Attorney General of the United States took care of this. He published the legal opinion that mates "occupy the status of both officers in the Navy and enlisted men."

THE BULLETIN BOARD

forms or further details should be addressed to Mrs. John M. Frier, Chairman of the Scholarship and Welfare Committee, 612 Eppard Circle, Falls Church, Va.

• **Daughters of the Cincinnati**—Information on the scholarships awarded by this organization to the daughters of military personnel may be obtained from Mrs. Bronson Trevor, Secretary, Daughters of the Cincinnati, 953 Fifth Avenue, New York, N. Y.

• **The Fashion Academy**—Assistance is available here for the daughters of military personnel. Inquiries should be addressed to Mrs. Emil Alvin Hartman, Fashion Academy, 812 Fifth Avenue at 62nd St., New York 21, N. Y.

• **Admiral Nicoll Ludlow Scholarships**—These awards were established to help the sons of commissioned naval officers attend St. Paul's School in Concord, N. H., or to assist the daughters of such officers to attend Emma Willard School at Troy, N. Y.

• **St. Margaret's School**—This institution, located at Tappahannock, Va., offers an annual tuition scholarship of \$325 to the daughters of active, retired or deceased members of the naval service.

In addition to the student aid listed here, many secondary schools and some colleges and universities, make substantial financial concessions on behalf of children of Navy and Marine Corps personnel. These concessions are primarily based on

evidence of financial need, and are also dependent on scholastic records, character and qualities of leadership. Details on these possible sources of assistance may be obtained from the Chief of Naval Personnel (Attn: Pers G221). For information on scholarship assistance not limited to armed forces dependents you may also communicate with that office; with any school or college or with the chairman of the scholarship committee of a donor organization.

The latest official information on scholarships available to Navy dependents is in BuPers Inst. 1755.13.

List of New Motion Pictures Scheduled for Distribution To Ships and Overseas Bases

The latest list of 16-mm features available from the Navy Motion Picture Service, Bldg. 311, Naval Base, Brooklyn 1, N. Y., is published here for the convenience of ships and overseas bases. The title of each picture is followed by the program number.

Those in color are designated by (C) and those in wide-screen processes by (WS). Distribution began in August.

These films are leased from the movie industry and distributed free to ships and most overseas activities under the Fleet Motion Picture Plan.

From Hell to Texas (1139) (C) (WS): Western; Don Murray, Diane Varsi.

Ten North Frederick (1140)

(WS): Drama; Gary Cooper, Diane Varsi.

Too Much, Too Soon (1141): Drama; Dorothy Malone, Errol Flynn.

Maracaibo (1142) (C): Drama; Cornel Wilde, Jean Wallace.

Hot Spell (1143): Drama; Shirley Booth, Anthony Quinn.

Paris Holiday (1144) (WS): Comedy; Bob Hope, Fernandel.

High School Confidential (1145) (WS): Melodrama; Russ Tamblyn, Jan Sterling.

Attack of the 50-Foot Woman (1146): Science-Fiction; Allison Hayes, William Hudson.

The Thing That Couldn't Die (1147): Melodrama; William Reynolds, Andra Martin.

Terror in a Texas Town (1148): Western; Sterling Hayden, Sebastian Cabot.

A Farewell to Arms (1149) (C) (WS): Drama; Rock Hudson, Jennifer Jones.

Cole Younger, Gunfighter (1150) (WS): Western; Frank Lovejoy, James Best.

Let's Rock (1151): Musical; Julius LaRosa, Phyllis Newman.

Ghost of the China Sea (1152): Adventure Drama; David Brian, Lynn Bernag.

Beautiful but Dangerous (1153) (C): Musical; Gina Lollobrigida, Vittorio Gassman.

Quattrill's Raiders (1154) (C) (WS): Melodrama; Steve Cochran, Diana Brewster.

Man from God's Country (1155)

Answers to "Quiz on the United States Navy."

Ques. No.	Answers	Ques. No.	Answers	Ques. No.	Answers	Ques. No.	Answers	Ques. No.	Answers	Ques. No.	Answers	Ques. No.	Answers
1.	3	10. cont.	3—1	25.	1	38.	1—5	47. cont.	2—4	59.	1	70.	1—4
2.	1—2	11.	2, 3	26.	1—2		2—1	48.	1	60.	2		2—2
	2—4	12.	4		2—1	39.	2	49.	3	61.	1—2		3—1
	3—3	13.	3		3—3	40.	1	50.	4		2—1		4—3
	4—1	14.	4	27.	2, 4	41.	3	51.	2		3—3	71.	2
3.	2	15.	4	28.	2	42.	4	52.	3	62.	4	72.	4
4.	1—3	16.	4	29.	3	43.	1—3	53.	3	63.	1—3	73.	4
	2—1	17.	2	30.	3		2—1	54.	1		2—1	74.	3
	3—2	18.	4	31.	2, 5		3—2	55.	3		3—2	75.	1—2
5.	3	19.	2	32.	3	44.	1	56.	1—2	64.	5		2—3
6.	3	20.	1	33.	2	45.	2		2—1	65.	2		3—1
7.	4	21.	4	34.	2	46.	4		3—4	66.	4	76.	2
8.	6	22.	2	35.	1	47.	1—3		4—3	67.	2	77.	4
9.	4	23.	3	36.	4			57.	4	68.	1	78.	4
10.	1—2	24.	5	37.	5			58.	1	69.	4 and 6	79.	4
	2—3											80.	1

(WS): Western; George Montgomery, Randy Stuart.

Thunder Road (1156): Melodrama; Robert Mitchum, Gene Barry.

Case Against Brooklyn (1157): Melodrama; Darren McGavin, Maggie Noyes.

Another Time, Another Place (1158): Drama; Lana Turner, Barry Sullivan.

DIRECTIVES IN BRIEF

This listing is intended to serve only for general information and as an index of current Alnavs and NavActs as well as current BuPers Instructions, BuPers Notices, and SecNav Instructions that apply to most ships and stations. Many instructions and notices are not of general interest and hence will not be carried in this section. Since BuPers Notices are arranged according to their group number and have no consecutive number within the group, their date of issue is included also for identification purposes. Personnel interested in specific directives should consult Alnavs, NavActs, Instructions and Notices for complete details before taking action.

Alnavs apply to all Navy and Marine Corps commands; NavActs apply to all Navy commands; BuPers Instructions and Notices apply to all ships and stations.

Alnavs

No. 27—In a letter to the senior member of the captain's retention board, the viewpoint and policy of SecNav concerning retention and continued active service of officers in the grade of captain are outlined.

No. 28—Announced approval by the President of selection board recommendations on Regular Marine Corps officers for temporary promotion to the grades of brigadier general and colonel.

No. 29—Announced approval by the President of reports of selection boards which recommended USN officers for temporary promotion to the grade of rear admiral in the Medical Corps, Supply Corps, Civil Engineering Corps and Dental Corps.

No. 30—Contained SecNav statement on the Department of Defense Reorganization Act of 1958 as a measure "to meet military reality of our time."

No. 31—Announced convening of selection boards to recommend officers on active duty (except TARs) for temporary promotion to the



"Maybe she's got a girl friend"

grades of commander (line), captain and commander (staff corps), commander, women (line and Supply Corps).

No. 32—Announced approval by the President of reports of the selection board that recommended USN and USNR line officers for temporary promotion to grade of captain.

Instructions

No. 1001.10C—Announces prerequisites, administrative policies and procedures pertaining to Naval Reserve officers on active duty in connection with the training and administration of the Naval Reserve.

No. 1000.14—Prescribes specific action to be taken to carry out the intent and achieve the objectives of General Order No. 21 (concerned with naval leadership) and describes continuing action being taken by the Chief of Naval Personnel to assist.

No. 1111.2D—Establishes the procedure for handling and administering the Navy College Aptitude Test to Navy and Marine Corps candidates for the NROTC.

No. 1111.4C—Establishes the procedures to be used in nominating qualified enlisted personnel, on active duty for participation in the Navy College Aptitude Test.

No. 1130.6—Prescribes pay grades in which former Navy or Coast Guard personnel may be enlisted or reenlisted in the Naval Reserve.

No. 1133.5A—Guarantees, under certain conditions, an assignment to school training after on board reenlistment.

No. 1133.12—Provides instructions for reenlistment or voluntary retention on active duty of personnel

who, upon expiration of current term of service, will have completed 20 years or more of active service.

No. 1301.6A—Standardizes the method of procuring, accounting and administering naval officers performing duty with the Army or Air Force.

No. 1416.1D—Sets forth a plan for the determination of professional fitness for promotion of officers by means of written examination or completion of specified courses of instruction in lieu of examinations.

No. 1611.6A—Sets forth instructions and procedures to be used for field naval aviator evaluation boards.

Notices

No. 1440 (18 July)—Established procedures for effecting changes in rating in the Metalsmith (ME) and Pipe Fitter (FP) ratings.

No. 1430 (25 July)—Provided a bibliography of study materials for use by all personnel concerned with advancement in rating examinations which will be prepared and administered in support of Change No. 11 to the *Manual of Qualifications for Advancement in Rating*, (NavPers 18068, Rev.).

No. 1221 (31 July)—Provided instructions for processing and effecting changes in special program codes.

No. 5101. (6 August)—Provided for distribution of the special article, "The Toll of Motor Vehicle Accidents, Navy and Marine Corps, during 1957," for information, guidance and appropriate action.

No. 1560 (7 August)—Announced Freedom Foundation Letter Awards competition for 1958. Deadline is 1 Nov 1958.

No. 1626 (15 August)—Clarified certain matters relative to enlisted naval personnel making up lost time.

No. 1111 (20 August)—Discussed the selection of enlisted personnel on active duty in the Navy and Marine Corps for appointments as midshipmen in the NROTC program for the class entering school in the fall of 1959.

No. 1085 (22 August)—Provided information and instructions concerning the removal of nonessential record materials from the enlisted service jacket of those members being separated from the service.

BOOKS

THIS MONTH'S CHOICE WILL STRESS HISTORY

HISTORY — PAST AND FUTURE — plays a large part in the books selected this month for review by the Library Services Branch. You'll find these titles, and many others, at your ship or station library.

To start at the beginning, *Death of a Nation*, by Clifford Dowdey, tells the story of the battle of Gettysburg from the Confederate viewpoint. Confederate forces had invaded the North during the final days of June 1863. On the first three days of July, one of the crucial battles of the Civil War was fought at Gettysburg, Pa. For three days two great armies — the Confederates under Robert E. Lee, the Union troops under George Meade — struggled desperately. This book describes in detail the reasons for the ultimate defeat of the Army of Northern Virginia.

Jutland, by Captain Donald Macintyre, RN, tells of the North Sea battle of World War I between the two most powerful fleets in the world. It brings together the two greatest fleets of dreadnoughts ever assembled in a fight such as had never been seen nor would ever be seen again.

Turning Point, edited by Philip Dunaway and George de Kay, with a subtitle of: "Fateful moments that revealed men and made history," is something else again. It describes the moments in the lives of some 40 men and women in which, through the decisions they make, they stand revealed for what they are. They in-

clude such individuals as F. D. Roosevelt, Helen Keller, Edward VIII, Joan of Arc, Robert E. Lee, John Brown and John Wilkes Booth.

Destroyer Man, by RADM A. F. Pugsley, RN, brings us up to World War II. For one man, he got around. He was in the thick of the Norwegian campaign and at Dunkirk. He was in Somerville's Force H in the Mediterranean, took part in some of the most savage of the Malta convoy battles, then turns up in the Indian Ocean when it came time to halt the Japanese attack. When the invasion of Hitler's "Fortress Europe" was decided upon, guess who was chosen to lead an assault? However, he reached his greatest fame in the amphibious assault on the Dutch island of Walcheren in which his force played a strange role operating under extraordinary conditions in the canals, waterways and estuaries of the Low Countries. A good man to have on your side.

Two books, *The Great Arms Race*, by Hanson Baldwin and *Soviet Strategy in the Nuclear Age* by Raymond L. Garthoff, are concerned with future history. Both are more or less technical analyses of present-day thinking concerning our future military prospects.

Arms Race appraises the U. S. military potentialities as compared — plane by plane, ship by ship and missile by missile — with any possible future enemy. Mr. Baldwin has

made a careful analysis of the difficulties hostile forces would encounter if they were to attempt to launch a surprise attack either on our bases overseas or on the United States itself. He has also devoted a large part of his book to a study of our weaknesses and tells what he thinks we can do in terms of defense spending and reorganization to reach our greatest strength. Lots of maps, charts and tables.

Strategy is a book that gives a forecast of Soviet strategy 10 or 15 years from now. The author backs up his theories with an analysis of the current picture of Soviet strategic concepts, of its land, air and sea power, its missiles, its goals, and its concepts of the enemy. He envisions the probability of new fuels, new materials and new speeds. He describes possible suboceanic developments, new devices for mapping the globe and more potent—radiological, bacterial and chemical — weapons. Critics call this book "exciting and challenging reading, illuminating, convincing and disturbing. A book that should receive the attention its authoritative background deserves."

If you prefer to leave the realm of politics for something more down-to-earth, you might try George Gamow's *Matter, Earth and Sky*, which the publishers call "a thorough and stimulating combination of the physical sciences." The author's presentation begins with a discussion of things familiar from everyday experience, followed by an unfolding of the world of atoms. Next, the book gives us a look into the interior of our globe, the planets, the ocean depths, the outer fringes of our atmosphere, and the origin of the earth. Lots of illustrations in its 640 pages.

If all this is too much for you, how about an ADM Hornblower yarn? This time, the fearsome Admiral is serving out his tour of duty in the West Indies. He had hoped that it might give him a rest from the type of activity that had helped establish his reputation. It did, relatively speaking. Of course, there was the small matter in which the *Estrella del Sur* was taken without firing a shot; there was Hornblower's Hurricane; the incident of the bewildered pirates; the young and annoying English civilian whose guns helped Bolivar win freedom for half a continent. *Admiral Hornblower in the West Indies* is the name and his story is told with all the skill of that master craftsman, C. S. Forester.



READY FOR READING—Crew members of USS *Hamul* (AD 20) built 'swank' ship's library holding 2000 volumes. Eighty books will be added each month.

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ALL HANDS
SPECIAL SUPPLEMENT

UNDER THE NORTH POLE

Another first for *USS Nautilus* — actually a series of firsts. Sailing further north than any other ship, she crossed the North Pole, and she did so under the ice cap. Then she went on to make the Northwest Passage, via the polar route. *USS Skate* came right after, proving it was no fluke.

"USS Nautilus, SS(N)571, left Honolulu on 23 July and after a rapid submerged voyage through the Bering Strait, went under ice off Point Barrow, Alaska, and proceeded due north to become, at 11:15 (EDST) on 3 August, the first ship in history to reach the North Pole.

"After steaming over 1800 miles under the polar pack the submarine on 5 August entered the open waters of the Greenland Sea west of Spitsbergen and continued south to the Atlantic to become the first ship to make the Northwest Passage via the polar route.

"The submarine covered a total distance of about

IN NEW YORK HARBOR—A-sub's long historic voyage, following crew's sub polar trip ends with huge parade.



8000 miles—of that, about 97 per cent was undersea."

"USS Skate, SS(N)578, duplicated the feat of Nautilus 11 August by successfully crossing the North Pole while exploring under-sea routes beneath the polar ice cap. However, the boat did not reach the Pacific.

"Skate, second smallest of the Navy's four atomic submarines, left New London, Conn., 30 July, carrying a crew of 10 officers, 87 enlisted men and nine civilian technicians. The sub crossed the Pole and surfaced at a break in the ice 40 miles away to report its success by radio.

"Skate is conducting further studies of the hitherto unknown underwater channel pioneered by Nautilus and acclaimed as a new route from one side of the world to the other..."

REMEMBER THOSE WORDS.

They were the first official Navy announcements of an event which may be comparable to *Nautilus'* first cruise down the Thames River (Conn.) under nuclear power in January 1955. Now, less than four years later, she had made the history books again. *Skate* had helped prove it wasn't an accident.

Nautilus' 1958 cruise was not the first time she had been under the polar ice.

In October 1957, she had reached latitude 87° North,



COLD FIGURES—Crew members of *uss Nautilus* check their position from the sub's inertial navigation system.

180 miles from the North Pole and farther north than any previous ship. Carrying a team of scientists as well as her own crew, she steamed 1383 miles under the polar ice cap on three excursions lasting a total of five and one-half days.

On her way to the Arctic, she completed a dive of 287 hours, covering more than 4000 miles. In the area in which she operated, she was able to gather many times the amount of data on ice characteristics and water depths than that previously obtained in the whole of Arctic explorations.

Before Nautilus' 1957 Arctic trip, no ship had ever been north of latitude 83° 21' N under its own power. This point was reached by a Russian icebreaker in 1955. Fram, Nansen's ship had drifted locked in the ice pack to latitude 85° 57' N in 1895.

GOOD TIME BELOW—As *uss Nautilus* passes under the Arctic ice, members of her crew relax and watch movies.



THE EXPERIENCE gained on this earlier occasion enabled *Nautilus* to make her subsequent trip so smoothly as to make it seem routine.

With CDR W. R. Anderson, USN, as commanding officer, *Nautilus* departed Pearl Harbor at 0200, 23 July. Her crew consisted of 13 officers, 97 enlisted men and five scientists and technicians. She cruised submerged on a northerly course past the Aleutian Islands and through the Bering Strait at an average speed of 20 knots. It was the plan of CDR Anderson to aim directly for the Pole from the Bering Sea. However, observations showed that a stiff northerly wind had pushed the ice pack farther south than had been anticipated.

Although it was probably possible to have gotten through on the original route as planned, CDR Anderson wanted to find the best possible "highway." His search took him from the vicinity north of Bering Strait to the coast of Northern Alaska and Point Barrow (see map).

At this point, it was discovered that the lead which normally opens into deep water at this time of year was easily accessible. The Barrow Sea Valley—a deep canyon in the ocean floor—was located and followed from a point just north of Point Barrow to its entry into the true Arctic Basin. Once in the Valley, *Nautilus* was in her true element and was able to cruise fast and deep.

The entrance to the Barrow Sea was found to be only four or five miles wide and very restrictive. During the winter it would be difficult to penetrate due to shifting ice conditions.

Nautilus surfaced only in the Point Barrow area to take photographs and to track the ocean floor for the sea valley.

The submarine traveled international waters throughout the trip and was well on the American side of Bering Strait while traversing that waterway.

AS SHE PASSED under the Pole at 2315, 3 August, more men—116—were assembled at the Pole than at any other time. At that point, the water was measured with a precision fathometer and was found to be 13,410 feet deep,

BAD TIME was dished out by frozen Arctic to crew of ill-fated *Jeannette* during early polar expedition in 1881.



Snow Goose Was There Too

Submarines were not the only type of Navy craft to disturb the quiet of the North Pole neighborhood this summer.

Within a few days of *Nautilus'* and *Skate's* visit, the U. S. Navy Air Development Unit's ZPG-2 airship, *Snow Goose*, flew to within 500 miles of the Pole. Its mission was to conduct Arctic research and drop mail and supplies to T-3, the island of ice used by U. S. scientists as a floating observation post.

Delayed and detoured several times by foul weather, the airship started north from Akron, Ohio, on 4 August to Fort Churchill, Canada; from there to Resolute Bay, Cornwallis Island, on August 7, and on August 9 hovered over the floating ice island well inside the Arctic Circle.

Flying low and slow, with a complement of scientific men and equipment for research, the blimp performed services no other aircraft has been capable of doing, furnishing a research platform hundreds of miles from a suitable landing area.

When it landed at South Weymouth at the end of its journey the blimp had covered a round trip of 9400 miles. The final 3400 miles were ticked off in 78 hours, with a one-hour stop at Fort Churchill for fuel.

When *Nautilus* arrived in New York after her polar trip, *Snow Goose* was there to greet her.

1927 feet deeper than the maximum measured by others who had reached the North Pole on previous expeditions.

Meanwhile, the commissarymen were preparing a lunch of steak, french fries, creamed peas and carrots, fresh fruit salad, fresh bread, and North Pole cake, which was served shortly after the crossing.

At this time, CDR Anderson addressed the crew in part as follows:

"Let us remember too those who have preceded us by other means—some to triumph, some to defeat, some to disaster. Without the observations of many Arctic explorers—some made at the expense of untold hardships—this voyage would not be possible.

"We should also pay tribute at this time to the true key ingredient of the voyage—nuclear power—and to the farsightedness of those who have provided us with it.

"Last, but far from least, I want to pay tribute to you, the officers and crew. I have never seen a ship nor a crew perform as well on this cruise. No commanding officer could ask for more. I am convinced that no better ship than *Nautilus* has ever been built. I am even more convinced that no finer group of officers and crew has ever put to sea."

The temperature inside the sub during the entire trip was 72 degrees. The relative humidity varied from 40 to 50 per cent. Thirty-eight movies were shown during the trip. Chess, cribbage and acey-deucey tournaments were held. The juke box played almost continuously.

Conditions of the *Nautilus'* transit of the Pole were considerably different from those of previous explorations. Consider, for example, excerpts from the log of LT. George DeLong, USN, commanding officer of *Jeannette* (published in April 1949 *ALL HANDS*):

"Tuesday, 11 October, 1881—Southwest gale, with snow. Unable to move. No game. Teaspoonful of glycerine and hot water for food. No more wood in our vicinity.

"Wednesday, 12 October—Everybody getting weaker and weaker. Southwest gale. Snow.

"Saturday, 22 October—Too weak to carry the bodies out on the ice. The doctor, Collins and myself carried them around the corner out of sight.

"Sunday, 23 October—Everybody pretty weak. Suffering in our feet. No foot gear.

"Sunday, 30 October—Boyd and Gortz died during the night. Collins dying."

When the rescue party arrived, this is what they found: None of the dead had boots. Their feet were covered with rags, tied on. In the pockets of all were pieces of burnt skin and of the clothing which they had been eating. The hands of all were more or less burned, and it looked as if when dying they had crawled into the fire.

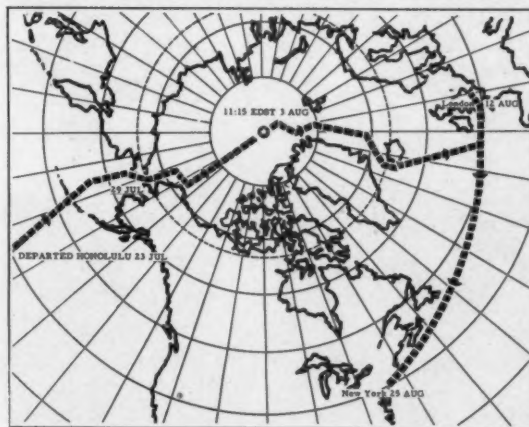
The events described above occurred two years after *USS Jeannette* had left San Francisco to carry the American Arctic Expedition through the Bering Strait bound for the Arctic Circle. Caught in the grip of an enormous ice pack, *Jeannette* had drifted helplessly for 21 months before the pressure finally stove in her bulkheads.

Here is *Nautilus'* schedule:

- Departed Honolulu 0200, 23 July.
- Transited Bering Strait, 29 July.
- Went under Arctic pack off Point Barrow, 0837, 1 August.
- North Pole, 2315, 3 August.
- Emerged from pack on Greenwich Meridian at 79° N, 0945, 5 August.
- Arrived Iceland, 2300, 7 August.
- Arrived Portland, England, 0830, 12 August.

Logging another "first" in her long list of record breaking achievements, *Nautilus* became the first ship in history to make a transpolar voyage from Honolulu to Europe. She took 19 days to cover 8146 miles. Average speed was over 17 knots. The nuclear power plant performed perfectly with no casualties on the transpolar voyage. It operated more efficiently in the cold water. In the past, the atom-driven submarine's power plant has operated continuously for as long as 47 and one-half days.

CHART SHOWS route of *Nautilus* under the North Pole.





ME TOO—Conventional sub, *uss Redfish* (SS 395), negotiated 50 miles under the polar ice cap back in 1952.

When *Nautilus* arrived in New York on 25 August she had traveled 132,182 miles on nuclear power — 62,560 miles on the first charge of nuclear fuel and over 69,600 miles (so far) on the second charge. She has now steamed over 94,000 miles submerged, approximately 72 per cent of her total time underway.

While making the transit, *Nautilus* obtained a continuous record of water depth and ice thickness all the way across the Arctic Ocean. More than 11,000 individual soundings were obtained in the relatively uncharted Arctic Basin.

Here are excerpts from the log of *Elisba Kane*, M.D., USN, (as described in the February 1954 issue of *ALL HANDS*). The time was 1855:

"By degrees the ice through which we were moving became more and more impacted; and it sometimes required all our ice-knowledge to determine whether a particular lead was practicable or not. The irregularities of the surface, broken by hummocks, and occasionally by larger masses, made it difficult to see far ahead; besides which, we were often embarrassed by the fogs.

"I was awakened one evening from a weary sleep in my fox-skins to discover that we had fairly lost our way.

"The officer at the helm of the leading boat, misled by the irregular shape of a large iceberg that crossed his track, had lost the main lead some time before, and was steering shoreward far out of the true course. The little canal in which he had locked us was hardly two boats' length across, and lost itself not far off in a feeble zigzag both behind and before us; it was evidently closing, and we could not retreat."

HERE ARE SOME of the conditions *Nautilus* found:

NOW HEAR THIS—LCDR F. M. Adams, USN, Executive Officer on board, briefs crew on duties while under ice.



- Polar ice is on the average 12 feet thick, although some ridges extend down 50 feet and even farther.

- Ice in the Arctic Ocean is constantly in motion due to the ocean currents and the wind. Water openings are always present even in the dead of winter, although unbroken ice sometimes stretches for 10 or more miles.

- The water in the Arctic Ocean is about 32° F., although north of Spitsbergen a branch of the Gulf Stream brings it up to about 40 degrees.

- The Arctic Ocean is bisected by a 9000-foot submerged mountain range, the Lomonosov Ridge, running from Canada to Russia. This ridge comes to within 2500 feet of the surface. Many uncharted bottom features were discovered by *Nautilus*.

Despite the utmost confidence in ship and skipper, travel of nearly 2000 miles under the ice is liable to be a gulp-making experience for the most seasoned submariner. The thought is always there: "What's to prevent us from getting lost, ramming into the bottom, or stuck under the ice?" At the Pole, where the usual compass has no meaning, what's to save a ship from wandering in circles for weeks?

Both *Nautilus* and *Skate* were well equipped to cope with such problems. Both were guided by the most complex navigational equipment ever assembled for an undersea adventure.

Nautilus carried for example, 10 separate sound equipment systems for detecting ice above her and three for measuring the distance to the ocean floor below. She is equipped with four compasses of various types plus automatic control gear for holding her exactly on course and depth. She is the first combatant ship with an inertial navigational system. Unlike an ordinary gyrocompass, such a system works as well at the North Pole as anywhere else.

No single navigational device or system was responsible for the successful North Pole cruise. The instruments were used to cross-check against one another.

AFTER *Nautilus* passed under the North Pole she continued south under the ice pack and emerged in the open waters of the Greenland Sea west of Spitsbergen and continued south into the Atlantic.

As she approached Iceland, on 8 August, CDR Anderson left *Nautilus* to be flown by jet to Washington where he was presented the Legion of Merit by the President.

The President also presented the officers and men of *Nautilus* with the first peacetime Presidential Unit Citation ever awarded and asked CDR Anderson to act as his representative in presenting the citation to the crew. The citation read as follows:

"For outstanding achievement in completing the first voyage in history across the top of the world, by cruising under the Arctic ice cap from the Bering Strait to the Greenland Sea. During the period 22 Jul 1958 to 5 Aug 1958, USS *Nautilus* SS(N)571, the world's first atomic powered ship, added to her list of historic achievements by crossing the Arctic Ocean from the Bering Sea to the Greenland Sea, passing submerged beneath the geographic North Pole. This voyage opens the possibility of a new commercial seaway, a Northwest Passage, between the major oceans of the world. Nuclear powered cargo submarines may, in the future, use this route to the advantage of world trade. The skill, professional com-

petency and courage of the officers and crew of *Nautilus* were in keeping with the highest traditions of the armed forces of the United States and the pioneering spirit which has always characterized our country."

In the meantime, *Nautilus*, under the acting command of LCDR Frank M. Adams, executive officer, proceeded to Portland, England, where CDR Anderson rejoined his ship before her entry into the port on 12 August. On 18 August, *Nautilus* departed England and arrived in New York 25 August.

USS *Nautilus* was not the first U. S. submarine to make a journey under the polar ice.

USS *Redfish* (SS 395) traveled 50 miles under the ice-cap in 1952. Earlier, in 1931, Sir Hubert Wilkins led an expedition which was to search for a commercial sea route under the Arctic ice.

By something more than a coincidence, his sub, the

TV Under the North Pole

Closed-circuit television equipment so sensitive it can see in the dark, was used on *Nautilus* for its trip under the polar ice pack.

The crew had a "seal's eye" view of the ice pack on a 21-inch monitor that warned them when the ship was too close to the bottom of the ice.

The system was installed just before the sub's departure on its polar voyage. The camera was mounted vertically in a pressurized one-ton steel capsule in the sail. A glass porthole in the top of the capsule shielded the lens of the camera. A cable was strung through two water-tight seals into the periscope room where the monitor showed a clear picture of the ice overhead.

Once under the ice pack, watching the ice on television "was a fascinating sight. The ice looked like clouds passing overhead."

The camera needed no artificial light, despite the fact that the submarine was below the ice pack and "very deep."

The television system complements sonar on the sub.

former USS O-12, was also renamed *Nautilus*. The plan was abandoned after the submarine broke down frequently on its journey to Spitsbergen. Because any one of these failures would have been fatal while under the ice, the expedition finally confined itself to exploration beneath the floes on the fringe of the ice pack.

One final thought concerning this modern-day, atomic Navy: some of the members of the crew on nuclear subs have mixed feelings when they are about to surface. Up there they get seasick.

A NATIVE OF BAKERSVILLE, Tenn., 37-year old CDR William Robert Anderson, USN, has been in command of the history-making *Nautilus* since 19 Jun 1957, when he relieved CAPT Eugene P. Wilkinson, USN, the first commanding officer of the world's first atomic sub. (CAPT Wilkinson now commands Submarine Division 102—the Navy's first atomic submarine division—to which *Nautilus*, *Seawolf* and *Skate* are attached.)

CDR Anderson was graduated from the Naval Academy in June 1942 (with the war-time class of 1943). He was then assigned to the Navy's Submarine



CDR Anderson



RADM Rickover



CDR Colvert

School at New London, Conn., for a course of instruction and was designated a submariner in September 1942. The following month he was assigned to the submarine USS *Tarpon* (SS 175) as communications officer and first lieutenant. While aboard that undersea craft he made three war patrols for which he received a Letter of Commendation with Ribbon and Combat "V" for "... his skillful navigation ... during attacks against enemy shipping."

Later, as engineering and diving officer aboard the sub USS *Trutta* (SS 421) he won the Bronze Star Medal with Combat "V" for "meritorious service ... and invaluable assistance to his commanding officer in conducting successful attacks which resulted in the sinking of 17 small ships and in the efficient rescue of a downed aviator ..."

After the war he served for three years in the submarine USS *Narwahl* (SS 167) as engineering and executive officer before being assigned to the NROTC Unit at the University of Idaho as an Instructor in Naval Weapons and Fire Control. After that duty he returned to sea again as executive officer of *Trutta* and then as exec of the new fast attack submarine USS *Tang* (SS 563). In July 1953 he assumed command of the Pearl Harbor based submarine USS *Wahoo* (SS 565) where he served for two years before becoming Head of the Tactical Department of the Submarine School at New London. This was followed by a tour of duty on the staff of RADM Hyman G. Rickover, USN, in the Division of Reactor Development, Atomic Energy Commission, Washington, D. C.

In addition to the Legion of Merit, the Bronze Star Medal, the Commendation Ribbon and Presidential Unit Citation, CDR Anderson has seven other medals and ribbons with four stars, and the Submarine Combat Pin with one silver and three bronze stars.

On 12 Oct 1958 CDR Anderson was presented the Christopher Columbus International Communications Prize—awarded annually by the municipal government of Genoa, Italy, for outstanding contributions to sea travel. This award consists of a gold medal bearing a likeness of Columbus and \$8000. Last year, this prize was given to RADM Rickover for his pioneering work in the building of *Nautilus*.

COOL LETTER—Letter to RADM E. W. Grenfell was signed by CDR Anderson as A-Sub passed under Pole.



Dear Admiral E. W. Grenfell, USN
Commander Submarine Force
U.S. Pacific Fleet
San Francisco, California

IF YOU'VE READ *ALL HANDS* within the last year or so, you will have noted with considerable pleasure the by-line of William Prosser, JOC, USN. He was responsible for such midget epics as *A Ship Is Born* (the ship was *USS Ranger*); *It's All Done With Mirrors*; *A Thumbnail History of Firepower*; *What's Going On in the Fleet*. From now on, all CINCNELM will be subject to his brilliant cotton-pickin' mind and nimble typewriter.

It's a little hard to visualize anyone who can take his place, but we think we've found one in the person of Erwin Sharp, JO1, USN, who, by one of those strange quirks of fate and the Distribution Branch of the Bureau, arrives in Washington fresh from—guess where? CINCNELM, of course.

Before London, Sharp did his tour in that cradle of Navy journalism, "The Gator" at PhibLant. He received his indoctrination in the 8th Naval District PIO. His coach at this point, by one of those strokes of coincidence not permissible in fiction, happened to be Tom Wholey, now a JOC on *ALL HANDS*.

Other changes have taken place on the staff. Jerry Etter, JOSA, USNR, and Charles Duncan, TEYN2, USN, are now filling the places of Bill Miller, JOSN, USNR, who has departed the Navy for the hard, cruel, outside world, and Norman Larson, JO3, USNR, who is now on board *USS Wasp* (CVS 18).

Etter acquired his journalistic experience with Griscom Publications, Long Island, N. Y., before he came to *ALL HANDS*. Duncan has much to tell us about the Far East. A Navy postal clerk at Oppama, Japan, for three years, he received his fund of sea stories aboard *USS John S. McCain* (DL 3), formerly of ComDesRon 21. He had just completed a six-month cruise of Australia, Japan and Taiwan when he was handed his orders to *ALL HANDS*. He still hasn't decided whether this is good or bad.

* * *

We'll have no eyebrow-lifting at the phrase "Career Navy." Consider the destiny of Ernest Resner, HMC, USN.

At present, Resner is teaching at the Nuclear Submarine School at New London, Conn. He has a good background for it. Before his assignment, he had freshly graduated from the University of Rochester as a radiation biologist. Since 1942, when he was called to active duty from the Naval Reserve, he has picked up such classifications as X-ray technician, clinical isotope technician, atomic reactor operator, and reactor health physicist.

He was one of the original 35 men who formed the engineering nucleus of the *Nautilus* atomic submarine project. At that time no one quite seemed to know what other training might be needed in his field. The Navy solved this problem by sending Resner to Bethesda Naval Hospital where he attended the X-ray School and then the course in Clinical Isotopes. He then met his other 34 plank-owners at Arco, Idaho, for the assembly of the Mark I reactor. It was during this phase that he took special courses at Brookhaven, Oak Ridge and Hanford, and, in between courses, managed to earn his certificate as a qualified Reactor Operator. He was aboard *Nautilus* for its first successful run in January 1955 and remained a member of *Nautilus*' crew until late 1956 when he departed for Rochester U.

Any further comments about the career Navy?

The All Hands Staff

The United States Navy

Guardian of Our Country

The United States Navy is responsible for maintaining control of the sea and is a ready force on watch at home and overseas, capable of strong action to preserve the peace or of instant offensive action to win in war.

It is upon the maintenance of this control that our country's glorious future depends. The United States Navy exists to make it so.

We Serve with Honor

Tradition, valor and victory are the Navy's heritage from the past. To these may be added dedication, discipline and vigilance as the watchwords of the present and future. At home or on distant stations, we serve with pride, confident in the respect of our country, our shipmates, and our families. Our responsibilities sober us; our adversities strengthen us.

Service to God and Country is our special privilege. We serve with honor.

The Future of the Navy

The Navy will always employ new weapons, new techniques and greater power to protect and defend the United States on the sea, under the sea, and in the air.

Now and in the future, control of the sea gives the United States her greatest advantage for the maintenance of peace and for victory in war. Mobility, surprise, dispersal and offensive power are the keystones of the new Navy. The roots of the Navy lie in a strong belief in the future, in continued dedication to our tasks, and in reflection on our heritage from the past. Never have our opportunities and our responsibilities been greater.

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• AT RIGHT: RIGS UP—Sixth Fleet sailors check rigging as hose is placed into position during refueling of *USS Des Moines* (CA 134) by *USS Mississinewa* (AO 144) while cruising in the Mediterranean.

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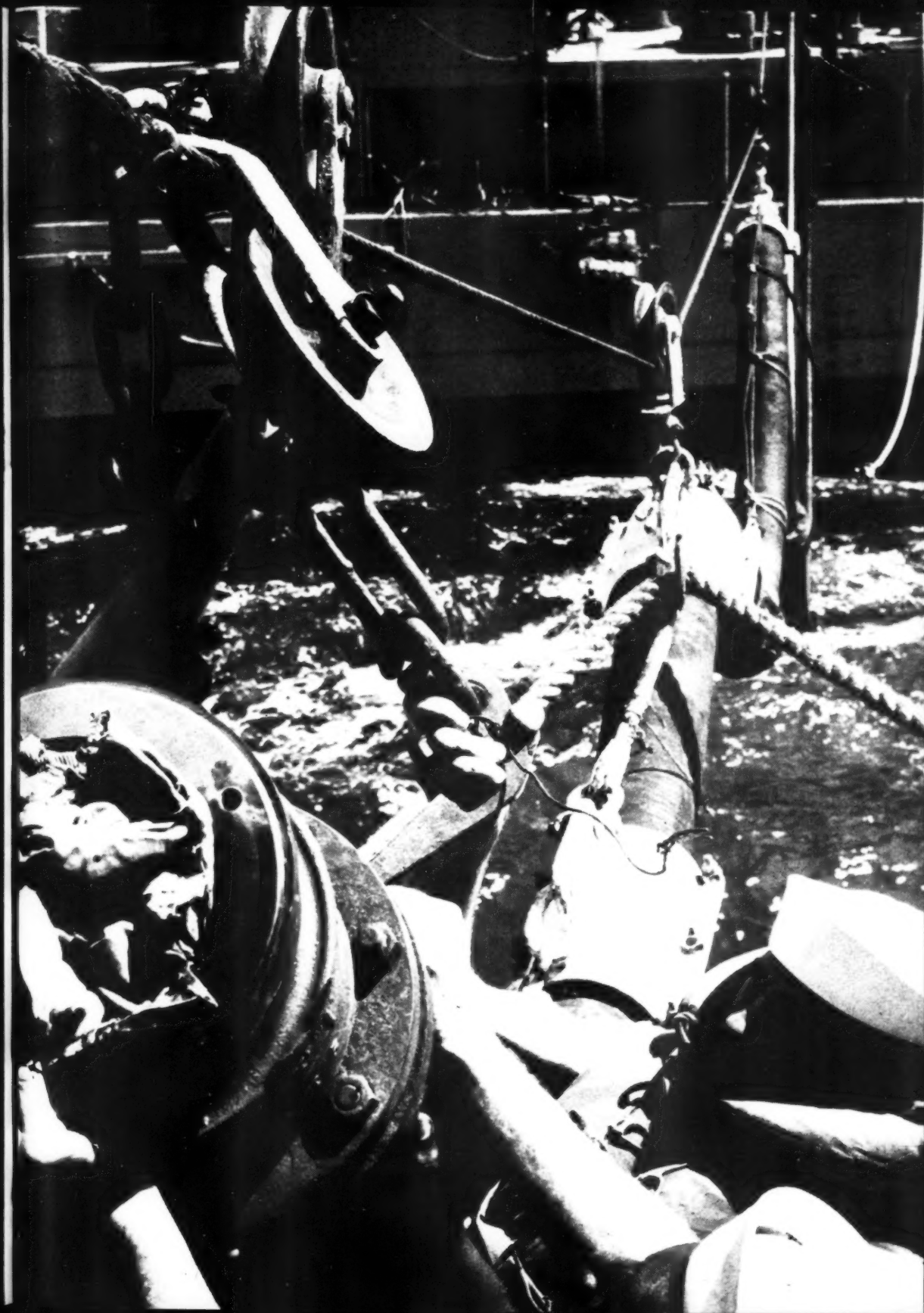
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